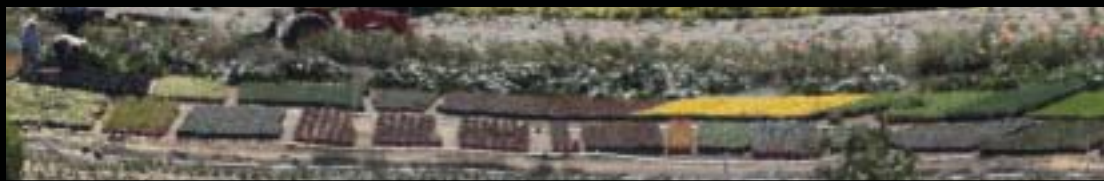
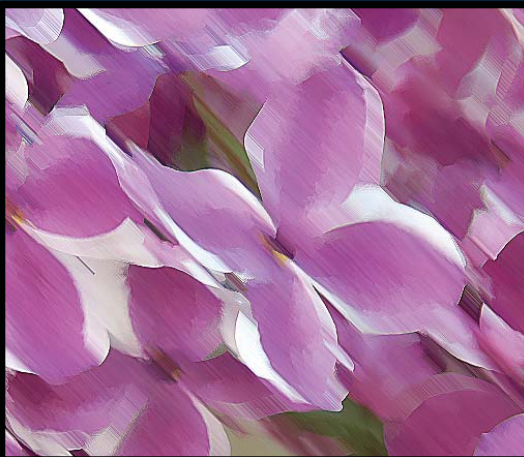


Lilac Hills Ranch

Traffic Impact Study

Prepared for

ACCRETIVE INVESTMENT, INC.
12275 El Camino Real, Ste. 110
San Diego, CA 92130



FINAL REPORT

Prepared by

CHEN  RYAN

CHEN RYAN ASSOCIATES | 11622 EL CAMINO REAL SUITE 100
SAN DIEGO, CALIFORNIA 92130

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June 28, 2013

Executive Summary

The proposed Lilac Hills Ranch project is located in the Valley Center and Bonsall Community Planning Areas of the unincorporated County of San Diego with State Route 76 to the north, Valley Center proper to the east, the City of Escondido to the south, and Interstate 15 and Old Highway 395 to the west.

The project consists of a mix of residential, commercial and institutional uses, along with parks and open space. Specifically, the project proposes 61,500 square feet of commercial uses, 28,500 square feet of office uses; a 50-room country inn; 903 traditional single-family detached homes; 375 multi-family homes (for-rent and for-sale at 20 or more dwelling units per acre); 468 age-restricted single family homes (senior community); necessary facilities and amenities to serve the senior population (including a senior community center, an assisted living and group residential facility); and civic facilities that include a K-8 school site, 23.8 acres of public and private neighborhood parks, a private recreational center, and other recreational amenities. Also planned within the project site are an on-site Recycling and Green Waste Drop-off Facility (RF), a potential Water Reclamation Facility (WRF) and other supporting infrastructure. Open space is proposed to retain some of the existing citrus and avocado groves, along with 103 acres of sensitive biological/wetland habitat.

The proposed Lilac Hills Ranch project would generate a total of 15,151 external daily trips by buildout of the project, including 1,171 AM peak hour trips and 1,433 PM peak hour trips.

Based on the County of San Diego significance criteria and the SANTEC/ITE Guidelines, the proposed project would result in direct traffic impacts at the following intersections:

- Old Highway 395 / W. Lilac Road – 585th EDU or by 585 project PM peak hour trips since PM peak hour intersection operation dictates the need for signalization;
- Old Highway 395 / Circle R Drive – 121st EDU from combined Phases 4 and 5 or by 121 project (Phases 4 and 5) PM peak hour trips since PM peak hour intersection operation dictates the need for signalization ; or 1,132nd total EDU.
- I-15 SB Ramps / Gopher Canyon Road – 1st EDU of Phase 4 or 363rd total EDU; and
- I-15 NB Ramps / Gopher Canyon Road – 1st EDU of Phase 4 or 363rd total EDU.

Signalization at each of these locations would mitigate the identified direct impacts by the project.

W. Lilac Road, between Old Highway 395 and Main Street would need to be improved to 2.2C as designated in the County's adopted Mobility Element by 929th EDU or a total of 9,298 project daily trip.

Note that the Existing Plus Project (Buildout) scenario includes the project's build-out traffic volumes added to the existing traffic volumes and existing roadway configurations and is shown in Traffic Analysis Phases A-E as required by the County's Guidelines for Determining Significance and Report Format & Content Requirements for Transportation and Traffic.

Traffic generated by the proposed project would result in cumulative impacts at a number of study area roadways and intersections, and the project should pay the appropriate County Traffic Impact Fee (TIF) or make a fair share contribution in which the improvement is a part of an approved Plan or Program.

The proposed project would also have cumulative impacts to I-15 between SR-78 and the Riverside County boundary, and these impacts would remain significant and unmitigable.

Proposed Mobility Element Classification Changes

The project proposes to downgrade *W. Lilac Road, between Main Street and the planned Road 3* from 2.2C (as classified in the currently adopted General Plan) to 2.2F.

This proposal is supported by the low (less than 6,200 ADT) forecast daily traffic volumes when Road 3 is deleted from the Mobility Element system. In October, 2011, after adoption of the County General Plan Update, the San Diego Association of Governments (SANDAG) acquired the 902-acre Rancho Lilac property through its Environmental Mitigation Program (EMP). SANDAG recorded a conservation easement over the entire 902 acres and designated this land as part of a 1,600 acre open space preserve in the State Route 76 corridor in North San Diego County. This acquisition would prevent implementation of the County's planned Road 3, and make the deletion of Road 3 from the currently adopted Mobility Element network a reasonably expected scenario.

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1.0 Introduction

1.1 Purpose of the Report

The purpose of this Traffic Impact Study (TIS) is to identify and document potential traffic impacts related to the development of the Lilac Hill Ranch project. This report also recommends mitigation measures for any identified intersection, roadway or freeway/highway deficiencies associated with the project.

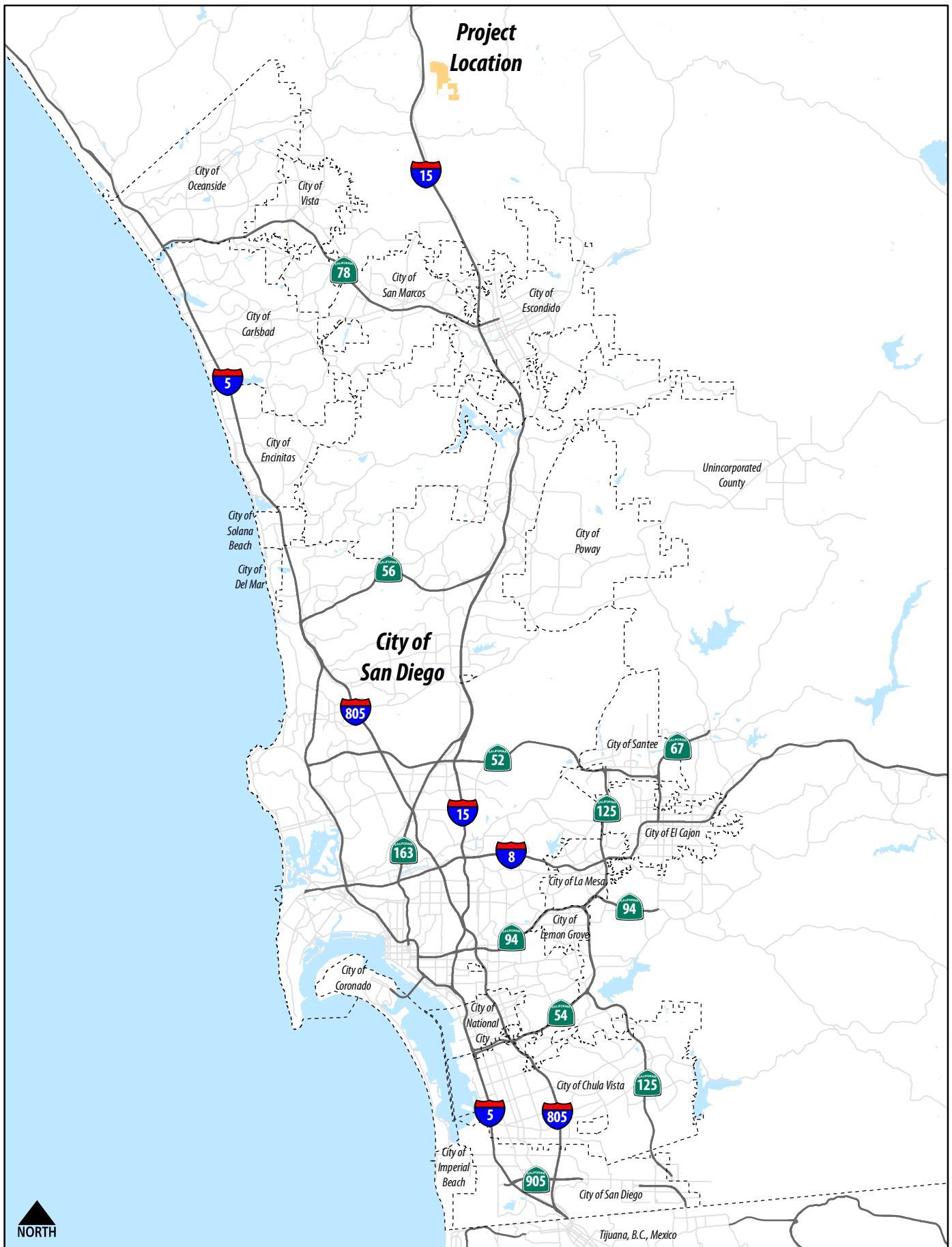
1.2 Project Location and Description

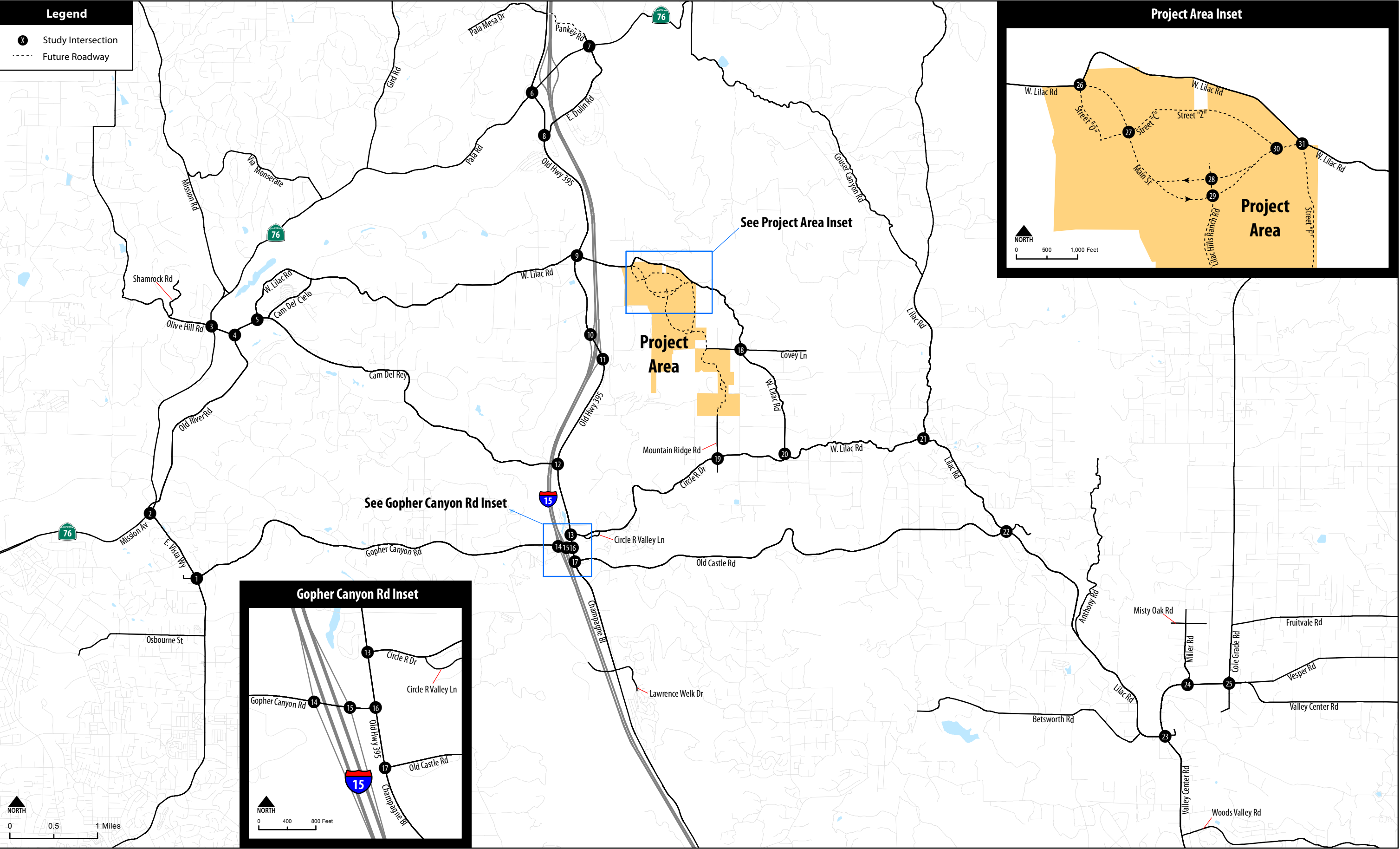
The proposed Lilac Hills Ranch project is located in the Valley Center and Bonsall Community Planning Areas of the unincorporated County of San Diego with State Route 76 to the north, Valley Center proper to the east, the City of Escondido to the south, and Interstate 15 and Old Highway 395 to the west. Project access is provided at W. Lilac Road via Main Street, Circle R Drive via Mountain Ridge Road, as well as Covey Lane. **Figure 1-1** displays the project's location within the region, while **Figure 1-2** illustrates the project study area.

The project consists of a mix of residential, commercial and institutional uses, along with parks and open space. Specifically, the project would include 61,500 square feet of commercial uses, 28,500 square feet of office uses; a 50-room country inn; 903 traditional single-family detached homes; 375 multi-family homes (for-rent and for-sale at 20 or more dwelling units per acre); 468 age-restricted single family homes (senior community); necessary facilities and amenities to serve the senior population (including a senior community center, an assisted living and group residential facility); and civic facilities that include a k-8 school site, 23.8 acres of public and private neighborhood parks, a private recreational center, and other recreational amenities. Also planned within the project site are an on-site Recycling and Green Waste Drop-off Facility (RF), a potential Water Reclamation Facility (WRF) and other supporting infrastructure. Open space is proposed to retain some of the existing citrus and avocado groves, along with 103 acres of sensitive biological/wetland habitat. The project is proposed to be developed in five (5) phases.

The project application includes a General Plan Amendment (GPA 12-001), a Specific Plan (SP12-001), a Master Tentative Map (TM 5571 RPL 1), an Implementing Tentative Map for Phase 1 (TM 5572 RPL 1); and a Major Use Permit (MUP 12-005) for the Water Reclamation Facility. The project would be implemented in five phases. Additional discretionary permits will be needed to implement latter phases, as identified in the Specific Plan.

Figure 1-3 displays the proposed site plan. Detailed land use and trip generation information are described in Chapter 4.

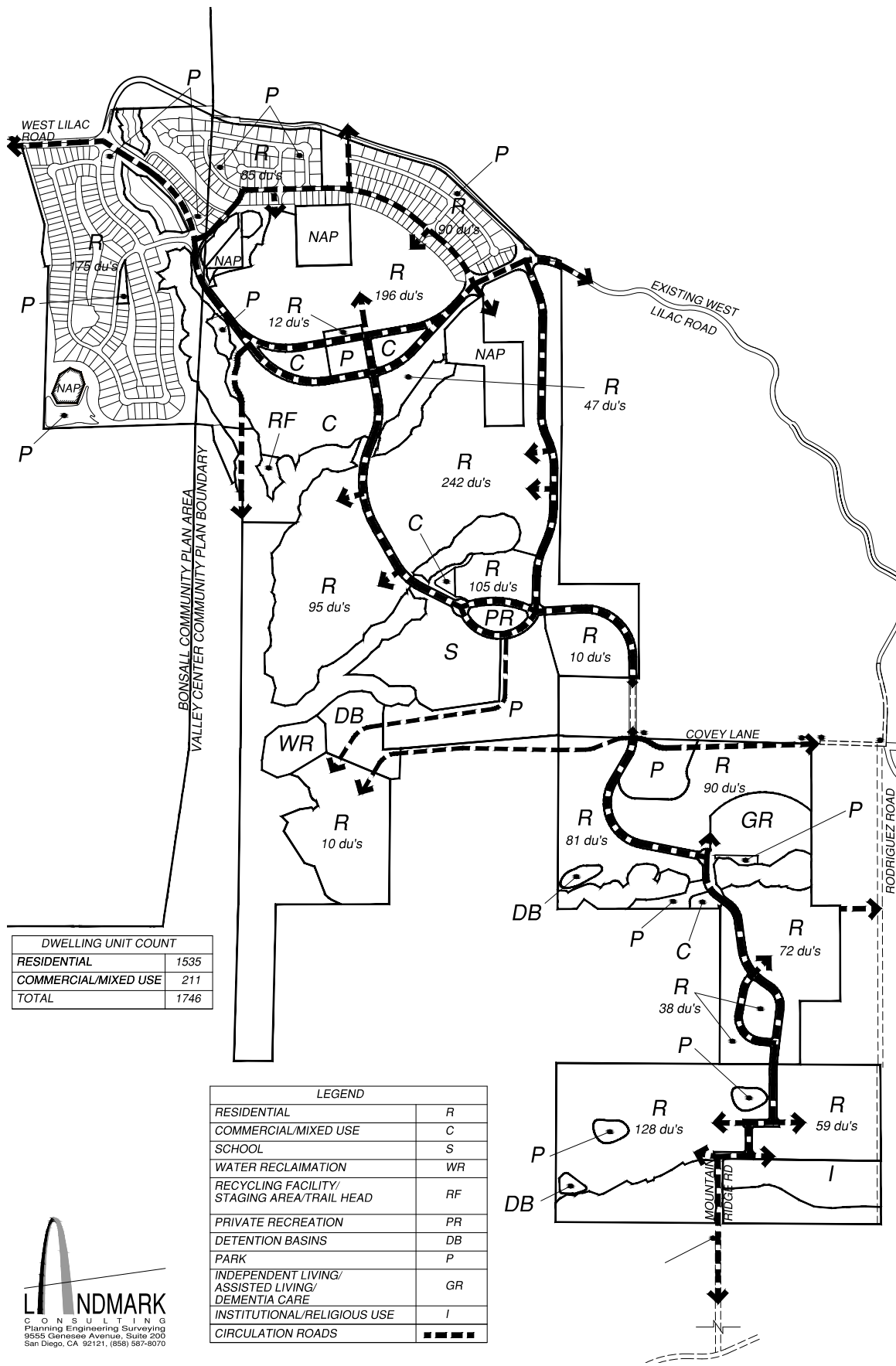




Lilac Hills Ranch Traffic Impact Study

CHEN✶RYAN

Figure 1-2
Project Study Area



Lilac Hills Ranch Traffic Impact Study

Figure 1-3
Project Site Plan

1.3 Study Scenarios

A total of nine (9) scenarios are analyzed in this study, including:

1. Existing Conditions – establishes the existing baseline of traffic operations within the study area.
2. Existing Plus Project (Phase A) Conditions – represents the existing transportation network with the addition of traffic from Phase 1 of the proposed project.
3. Existing Plus Project (Phase B) Conditions – represents the existing transportation network with the addition of traffic from Phases 1 and 4 of the proposed project.
4. Existing Plus Project (Phase C) Conditions – represents the existing transportation network with the addition of traffic from Phases 1, 4 and 2 of the proposed project.
5. Existing Plus Project (Phase D) Conditions – represents the existing transportation network with the addition of traffic from Phases 1, 4, 2 and 5 of the proposed project.
6. Existing Plus Project (Phase E, project buildout) Conditions – represents the existing transportation network with the addition of traffic from buildout of the proposed project.
7. Cumulative Traffic Conditions – represents cumulative traffic conditions, including existing baseline traffic, traffic from anticipated land development projects, and traffic from the buildout of the proposed project.
8. Horizon Year Plan-to-Plan (Proposed vs. Adopted) Analysis – provides a plan-to-plan analysis assessing potential impacts to the adopted County’s General Plan Mobility Element roadways within the project study area, resulting from proposed changes in development land use, density, and/or intensity associated with the proposed project.
9. Horizon Year Plan-to-Plan (Proposed vs. Reasonably Expected) Analysis – In October, 2011, after adoption of the County General Plan Update, the San Diego Association of Governments (SANDAG) acquired the 902-acre Rancho Lilac property through its Environmental Mitigation Program (EMP). SANDAG recorded a conservation easement over the entire 902 acres and designated this land as part of a 1,600 acre open space preserve in the State Route 76 corridor in North San Diego County. This acquisition would prevent implementation of the County’s planned Road 3. For this reason, an additional plan-to-plan analysis was performed as part of this TIS in order to assess the potential project traffic impacts to the County’s mobility network without Road 3.

1.4 Report Organization

Following the Introduction chapter, this report is organized into the following sections:

-
- 2.0 Analysis Methodology – This chapter describes the methodologies and standards utilized to analyze roadway, intersection, and state highway/freeway traffic conditions. This chapter also documents the traffic forecast modeling process and assumptions for this project.
 - 3.0 Existing Conditions – This chapter describes the existing traffic network within the study area and provides analysis results for existing traffic conditions.
 - 4.0 Project Description – This chapter describes the proposed project including project traffic generation, trip distribution patterns, and roadway assignments. The project trip distribution was developed via a computer generated “Select Zone” analysis utilizing the Series 12 SANDAG transportation model.
 - 5.0 Existing Plus Project Conditions – This chapter describes the existing traffic network with additional traffic generated by the various traffic analysis phases of the proposed project. Mitigation measures, if necessary, for project-related impacts are also identified.
 - 6.0 Cumulative Traffic Conditions – This chapter describes cumulative land development projects anticipated to generate additional traffic within the study area. Analysis results are provided for the existing plus cumulative projects plus proposed project condition, along with recommended mitigation measures (if necessary).
 - 7.0 Site Access and On-Site Circulation – This chapter presents an assessment of transportation facilities providing access to the proposed project. It also recommends functional classifications for all roadways internal to the project.
 - 8.0 Hazards to Pedestrians and Bicyclists – This chapter describes existing and proposed pedestrian and bicycle facilities in the vicinity of the project site, as well as potential impacts to cyclists and pedestrians.
 - 9.0 General Plan Consistency Analyses – This chapter provides two plan-to-plan analyses assessing potential traffic impacts to the County’s General Plan Mobility Element roadways due to changes in the proposed project’s land use, density, and/or intensity. The two plan-to-plan analyses include comparisons of, first, the proposed project and the currently adopted GP (with Road 3); and second, the proposed project and the reasonably expected network (without Road 3). The purpose of these analyses is to determine whether the land use changes proposed by this project can be supported by the County’s Mobility Element. If deficiencies are identified, appropriated mitigation measures are recommended.
 - 10.0 Findings and Recommendations – This chapter summarizes overall study findings and identifies recommended project-related mitigation measures.

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- 11.0 Construction Traffic – This chapter identifies potential traffic impacts associated with the Lilac Hills Ranch project construction traffic.
 - 12.0 No-School Alternative – This chapter discusses the “No School” on-site alternative and how this alternative would affect the study area network and operations.
 - 13.0 Weekend Church Traffic – This chapter documents potential traffic impacts associated with weekend church traffic, particularly on Sundays.
 - 14.0 North County Specific Residential Trip Generation and Effects – This chapter summarizes the North County specific residential trip generation rates survey and discusses how these rates would affect traffic impact identifications.

2.0 Analysis Methodology

The traffic analyses prepared for this study were performed in accordance with County of San Diego traffic impact guidelines, the enhanced California Environmental Quality Act (CEQA) project review process, and SANTEC/ITE Guidelines for TIS in the San Diego.

The SANTEC/ITE guidelines require delineation of a project study area based on the following criteria:

- All local roadway segments (including all State surface routes), intersections, and mainline freeway locations where the proposed project will add 50 or more peak-hour trips in either direction to the existing roadway traffic.
- All freeway entrance and exit ramps where the proposed project will add a significant number of peak-hour trips to cause any traffic queues to exceed ramp storage capacities.

In addition to the SANTEC/ITE requirements, the project study area also includes all County Mobility Element roadways and intersections where 25 or more peak hour project trips are projected to travel as per County's requirements.

2.1 Level of Service Definition

Level of service (LOS) is a quantitative stratification of performance measures (speed, travel time, comfort, etc.) that represent quality of service. Quality of service describes how well a transportation facility or service operates from a traveler's perspective. A vehicle level of service definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst.

Table 2.1 describes generalized definitions of roadway systems operating at LOS A through F.

2.2 Roadway Segment Level of Service Standards and Thresholds

Roadway segment level of service standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. **Table 2.2** presents the roadway segment capacity and level of service standards utilized to analyze roadway segments within the unincorporated County of San Diego.

**TABLE 2.1
LEVEL OF SERVICE DEFINITIONS**

LOS	Characteristics
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual 2010, Chapter 16.

**TABLE 2.2
COUNTY OF SAN DIEGO
ROADWAY SEGMENT DAILY CAPACITY AND LEVEL OF SERVICE STANDARDS**

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
6.1	6	65 mph	Expressway	36,000	54,000	70,000	86,000	108,000
6.2	6	65 mph	Prime Arterial	22,200	37,000	44,600	50,000	57,000
4.1A	4	55 mph	Major Road with Raised Median	14,800	24,700	29,600	33,400	37,000
4.1B			Major Road with Intermittent Turn Lanes	13,700	22,800	27,400	30,800	34,200
4.2A	4	40 mph	Boulevard with Raised Median	18,000	21,000	24,000	27,000	30,000
4.2B			Boulevard with Intermittent Turn Lane	16,800	19,600	22,500	25,000	28,000
2.1A	2	45 mph	Community Collector with Raised Median	10,000	11,700	13,400	15,000	19,000
2.1B			Community Collector w/ Continuous Turn Lane	3,000	6,000	9,500	13,500	19,000

TABLE 2.2
COUNTY OF SAN DIEGO
ROADWAY SEGMENT DAILY CAPACITY AND LEVEL OF SERVICE STANDARDS

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
2.1C	2	45 mph	Community Collector w/ Intermittent Turn Lane	3,000	6,000	9,500	13,500	19,000
2.1D			Community Collector with Improvement Options	3,000	6,000	9,500	13,500	19,000
2.1E			Community Collector	1,900	4,100	7,100	10,900	16,200
2.2A	2	40 mph	Light Collector with Raised Median	3,000	6,000	9,500	13,500	19,000
2.2B			Light Collector with Continuous Turn Lane	3,000	6,000	9,500	13,500	19,000
2.2C			Light Collector with Intermittent Turn Lanes	3,000	6,000	9,500	13,500	19,000
2.2D			Light Collector with Improvement Options	3,000	6,000	9,500	13,500	19,000
2.2E			Light Collector	1,900	4,100	7,100	10,900	16,200
2.2F			Light Collector with Reduced Shoulder	5,800	6,800	7,800	8,700	9,700
2.3A	2	35 mph	Minor Collector with Raised Median	3,000	6,000	7,000	8,000	9,000
2.3B			Minor Collector with Intermittent Turn Lane	3,000	6,000	7,000	8,000	9,000
2.3C			Minor Collector	1,900	4,100	6,000	7,000	8,000

Source: County of San Diego Public Road Standards; March 2012

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and level of service of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour volumes.

For the purposes of this traffic analysis, LOS D is considered acceptable for Mobility Element roadway segments within the unincorporated County of San Diego.

2.3 Peak Hour Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis, including both signalized and unsignalized intersections.

2.3.1 Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in Chapter 18 of the *HCM 2010*. The *HCM 2010* methodology defines intersection level of service as a function of intersection control delay in terms of seconds per vehicle (sec/veh).

The *HCM 2010* methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in **Table 2.3**. The computerized analysis of intersection operations was performed utilizing the *Synchro 8.0 Build 802* traffic analysis software (by Trafficware).

TABLE 2.3
SIGNALIZED INTERSECTION LEVEL OF SERVICE
HIGHWAY CAPACITY MANUAL OPERATIONAL ANALYSIS METHOD

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	<i>LOS A</i> occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	<i>LOS B</i> occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with <i>LOS A</i> .
20.1 – 35.0	<i>LOS C</i> occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	<i>LOS D</i> occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	<i>LOS E</i> occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	<i>LOS F</i> occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: 2010 Highway Capacity Manual, Chapter 18.

2.3.2 Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections, were analyzed using the Chapters 19 and 20 methodology of the *HCM 2010*. The level of service for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay at each minor-street movement. *LOS F* would occur when the volume-to-capacity

ratio exceeds 1.0, regardless of the control delay. **Table 2.4** summarizes the level of service criteria for unsignalized intersections.

TABLE 2.4
LEVEL OF SERVICE CRITERIA FOR
STOP CONTROLLED UNSIGNALIZED INTERSECTIONS

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: 2010 Highway Capacity Manual, Chapters 19 & 20.

County of San Diego considers LOS D during the AM and PM peak hours to be the minimum standard for intersection level of service.

2.4 Two-Lane Highway Level of Service Standards and Thresholds

The existing Old Highway 395 is considered a Mobility Element roadway, but operates as a two-lane highway. As directed in Section 4.3 of the County of San Diego Guidelines for Determining Significance, Old Highway 395 is analyzed as a two-lane highway under Existing, Existing Plus Project, and Existing Plus Cumulative Projects Plus Project conditions in this report.

Under “Horizon Year” analyses, Old Highway 395 is treated as a Mobility Element road since the majority of this facility, with exception of the segment between SR-76 and W. Lilac Road, is classified as either a 4-lane Major or 4-lane Boulevard in the County’s General Plan.

Table 2.5 displays the two-lane highway ADT thresholds for LOS E and LOS F, when signalized intersection spacing is greater than one mile.

TABLE 2.5
COUNTY OF SAN DIEGO
TWO-LANE HIGHWAY LEVEL OF SERVICE THRESHOLDS
WITH SIGNALIZED INTERSECTION SPACING OVER ONE MILE

LOS	LOS Criteria
LOS E	> 16,200 ADT
LOS F	> 22,900 ADT

Source: County of San Diego

Note:

Where detailed data are available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

For two-lane highways where signalized intersection spacing is less than one mile, the level of service is determined by the intersections along the subject highway.

2.5 Freeway/State Highway Level of Service Standards and Thresholds

Freeway level of service and performance analysis is based upon procedures developed by Caltrans District 11. The procedure for calculating freeway level of service involves estimating a peak hour volume to capacity (V/C) ratio. Peak hour volumes are estimated from the application of design hour ("K"), directional ("D") and truck ("T") factors to Average Daily Traffic (ADT) volumes. The base capacity is assumed to be 2,350 pc/h/ln.

The resulting V/C is then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in **Table 2.6**. The corresponding level of service represents an approximation of existing or anticipated future freeway operating conditions in the peak direction of travel during the peak hour.

TABLE 2.6
FREEWAY AND STATE HIGHWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

LOS	V/C	Congestion/Delay	Traffic Description
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

LOS D or better is used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

2.6 Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, all signalized intersections at freeway ramps were analyzed using Intersecting Lane Volume (ILV) procedures as described in Topic 406 of the Caltrans *Highway Design Manual* (HDM). This methodology is based upon an assessment of individual intersections as isolated units, without consideration of the effects of adjacent intersections. For this reason, the ILV analysis is utilized as an additional validation of signalized ramp intersection operations derived from the *HCM 2010* methodology. **Table 2.7** provides values of ILV/hr associated with various traffic flow thresholds.

TABLE 2.7
TRAFFIC FLOW CONDITIONS AT RAMP INTERSECTIONS
AT VARIOUS LEVELS OF OPERATION

<i>ILV/hr</i>	Description
<i><1200: (Under Capacity)</i>	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
<i>1200-1500: (At Capacity)</i>	Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
<i>>1500: (Over Capacity)</i>	Stop-and-go operation with severe delay and heavy congestion ⁽¹⁾ . Traffic volume is limited by maximum discharges rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Caltrans Highway Design Manual, Topic 406

Note:

(1) The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500 ILV/hr, and the excess will be delayed in a queue.

2.7 Ramp Metering Analysis

Ramp metering analysis should be conducted, based upon SANDAG's CMP guidelines, to calculate delays and queues at the study area freeway on-ramps. However, since no ramp meters exist within the project study area, ramp metering analysis is not required and therefore not included in this study.

2.8 Determination of Significant Impacts

This section outlines the thresholds for determination of significant project-related impacts to roadways and intersections in the County of San Diego.

County of San Diego Traffic Impact Criteria

Mobility Element Roads

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment, unless specific facts show that there are other circumstances that mitigate or avoid such impacts:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Mobility Element Road or State Highway currently operating at LOS E or LOS F as identified in **Table 2.8**, or will cause a Mobility Element Road or State Highway to operate at LOS E or LOS F as a result of the proposed project, or
- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.

TABLE 2.8
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON ROAD SEGMENTS:
ALLOWABLE INCREASES ON CONGESTED ROAD SEGMENTS

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Source: County of San Diego

Notes:

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

Signalized Intersections

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a roadway segment:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F as identified in **Table 2.9**, or will cause a signalized intersection to operate at LOS E or LOS F.
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

TABLE 2.9
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON INTERSECTIONS:
ALLOWABLE INCREASES ON CONGESTED INTERSECTIONS

Level of Service	Signalized	Unsignalized
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: County of San Diego

Notes:

1. A critical movement is one that is experiencing excessive queues.
2. By adding proposed project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

Unsignalized Intersections

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment:

- The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

Two-Lane Highways when Signalized Intersection Spacing Over One Mile

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a two-lane highway facility with signalized intersection spacing greater than one mile:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F, as identified in **Table 2.10**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the proposed project.

TABLE 2.10
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION:
ALLOWABLE INCREASES ON TWO-LANE HIGHWAYS
WITH SIGNALIZED INTERSECTION SPACING OVER ONE MILE

LOS	LOS Criteria	Impact Significance Level
LOS E	> 16,200 ADT	> 325 ADT
LOS F	> 22,900 ADT	> 225 ADT

Source: County of San Diego

Note:

Where detailed data are available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

Two-Lane Highways when Signalized Intersection Spacing Under One Mile

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a two-lane highway facility with signalized intersection spacing less than one mile:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F, as identified in **Table 2.11**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the proposed project.

TABLE 2.11
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION:
ALLOWABLE INCREASES ON TWO-LANE HIGHWAYS
WITH SIGNALIZED INTERSECTION SPACING UNDER ONE MILE

LOS	LOS Criteria
LOS E	Intersection delay of 2 seconds
LOS F	Intersection delay of 1 second, or 5 peak hour trips on a critical movement

Source: County of San Diego

Notes:

1. A critical movement is one that is experiencing excessive queues.
2. By adding proposed project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

SANTEC/ITE Guidelines

Facilities that belong to other jurisdictions or Caltrans, should comply with the traffic study requirements identified in the SANTEC/ITE Guidelines, as summarized in **Table 2.12**.

TABLE 2.12
SANTEC/ITE MEASURE OF SIGNIFICANT PROJECT TRAFFIC IMPACTS

Level of Service (LOS) with Project	Allowable Change Due to Impact					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec)	Delay (min.)
	0.01	1	0.02	1	2	2

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

The project study area included two (2) Caltrans facilities: Interstate 15 and State Route 76. However, based upon the SANTEC/ITE study criteria discussed at the beginning of this chapter as well as a review of the SANDAG “Select Zone” assignments, the proposed project would not add 50 or more peak hour trips in either direction of SR-76. Therefore, SR-76 was not analyzed in this study.

3.0 Existing Conditions

This section describes key roadway, two-lane highway, and freeway segments, intersections, as well as existing daily roadway/highway/freeway and peak hour intersection traffic volumes. Level of service analysis results for all study area facilities under Existing conditions are presented.

3.1 Existing Transportation Network

Several regionally and locally significant roadways and freeways traverse the study area. Each of the key transportation facilities, as well as associated study intersections within the study area, is discussed below.

Freeway and State Highway Facilities

Two (2) Caltrans freeway/state highway facilities traverse the study area, as follows:

I-15 – I-15 is a grade separated freeway and ranges from 8 to 10 general purpose lanes within the study area. The travel lanes are generally 12 feet wide and the shoulders are generally 10 to 12 feet wide. The 20-mile I-15 Express Lanes Project, funded in part by the TransNet, was completed in January 2012. The Project constructed four (4) managed lanes, between SR-163 and SR-78, with a moveable barrier for maximum flexibility; multiple access points to the general purpose highway lanes; and direct access ramps for high-frequency Bus Rapid Transit (BRT) service. I-15, between SR-78 and Riverside County is planned to be widened with 4 toll lanes as per the 2050 RTP. However, this improvement is not assumed in the Horizon Year analysis since no secured funding sources were identified. Two interchanges (at Old Highway 395 and at Gopher Canyon Road) are located within the study area providing regional access for the proposed project. The posted speed limit is 70 mph along I-15 in the vicinity of the project.

SR-76 – SR-76 is a two-lane undivided highway within the study area, except for the segment between Old Highway 395 and the I-15 SB ramps, where this facility has four lanes. It is important to note that this facility, between Melrose Drive and S. Mission Road (the SR-76 Middle Segment) is currently under construction and the completion date is anticipated to be early 2013. The SR-76 East Segment between S. Mission Road and just east of I-15 is also planned to be widened to four lanes by 2015. Class II bike lanes are planned along SR-76 within the study area.

East-West Roadway Facilities

Dulin Road – Dulin Road, east of Old Highway 395 is currently a two-lane undivided roadway with a posted speed limit of 25 mph. On-street parking is provided along both sides of the street in the residential area. The facility is classified as a 2.1E Community Collector in the County General Plan Mobility Element.

W. Lilac Road – W. Lilac Road, between Camino Del Rey and Old Highway 395, is generally a two-lane undivided roadway and is classified as a 2.2E Light Collector with Class II bike lanes in the County General Plan Mobility Element. Between Old Highway 395 to Lilac Road, W. Lilac Road is also a two-lane undivided roadway. W. Lilac Road, between Old Highway 395 and the planned Road 3, is classified as a 2.2C Light Collector with intermittent turn lanes in the County General Plan Mobility Element, while the segment between Road 3 and Lilac Road is classified as a 2.2F Light Collector with reduced shoulder. *The project proposes to downgrade W. Lilac Road between Main Street and the planned Road 3 from the classified 2.2C to 2.2F.* A posted speed limit is not provided along this facility. However, a recent travel time survey (as shown in **Appendix A**) conducted by Chen Ryan Associates indicates that the average travel speed along W. Lilac Road, between the I-15 overpass and Lilac Walk, is approximately 40 mph.

Camino Del Cielo – Camino Del Cielo is a two-lane roadway with a wide median or a two-way left-turn lane between Camino Del Rey and Via Casitas and a two-lane undivided roadway between Via Casitas and W. Lilac Road. This facility has a posted speed limit of 40 mph and is classified as a 2.2E Light Collector in the County General Plan Mobility Element.

Camino Del Rey – Camino Del Rey is generally a two-lane undivided roadway between SR-76 and Old Highway 395, with the exception of the segment (approximately 2,400 feet) east of W. Lilac Road which has either a striped median or a two-way left-turn lane. The posted speed limit along with facility ranges from 45 to 50 mph. Camino Del Rey is classified in the County General Plan Mobility Element as a 4.2B Boulevard with intermittent turn lanes between SR-76 and Camino Del Cielo, and a 2.2C Light Collector between Camino Del Cielo and Old Highway 395. Class II bikes lanes are planned along this facility, between Old River Road and Old Highway 395.

Gopher Canyon Road – Gopher Canyon Road is a two-lane undivided roadway between E. Vista Way and I-15 SB Ramps and a four-lane roadway with a striped median between the I-15 SB Ramps and Old Highway 395. This facility has a posted speed limit of 50 mph and is classified as a 4.1B Major Road with intermittent turn lanes and a Class III bike route in the County General Plan Mobility Element.

Circle R Drive – Circle R Drive is currently a two-lane undivided roadway between Old Highway 395 and W. Lilac Road and is classified as a 2.2E Light Collector. A speed limit was not post along this facility. However, a recent travel speed survey (as shown in **Appendix B**) conducted by NDS indicates that the average and 85th percentile travel speeds along Circle R Drive, east of Mountain Ridge Road, is approximately 35 mph and 40-45 mph, respectively. Circle R Drive provides a restricted access to the senior community (southern access) via Mountain Ridge Road.

Old Castle Road – Old Castle Road, between Old Highway 395 and Lilac Road, is a two-lane undivided roadway with a posted speed limit that varies from 45 mph to 55 mph. This facility is classified as a 2.2D Light Collector with improvement options in the County General Plan Mobility Element, and includes a Class III bike route.

Covey Lane – Covey Lane is currently a two-lane undivided private road for its entirety. A speed limit was not post along this facility. However, a recent travel speed survey (as shown in Appendix B) conducted by NDS indicates that the 85th percentile travel speeds along Covey Lane are approximately 30-35 mph. It is proposed that this facility, approximately 600 feet west of W. Lilac Road to the Lilac Hills Ranch project boundary, be designated as a public road due to the existing IOD for road improvements in this area. Covey Lane provides an unrestricted access to both the entire community north of Covey Lane and a restricted access to the senior community.

Main Street - The project proposes the construction of a 2-lane private road, “Main Street”, including a one-way couplet between east of Standel Lane and Lilac Walk (see Figure 1-3 for alignment). This road creates two alternative routes to W. Lilac Road and provides primary access to and from the project site as it traverses the town center of the Lilac Hills Ranch project. The design speed along Main Street is proposed to be 30 mph.

North-South Roadway Facilities

E. Vista Way – E. Vista Way, between SR-76 and Osborne Street, is generally a two-lane roadway with a two-way left-turn lane and a posted speed limit of 50 mph. This facility is classified as a 4.1A Major Road with a raised median and Class II bike lanes in the County General Plan Mobility Element.

Old River Road – Old River Road, between SR-76 and Camino Del Rey is generally a two-lane undivided roadway with the exception of the segment southwest of Golf Club Drive (approximately 1,800 feet), which has a wide raised median and on-street parking along both sides. The post speed limit in this area is 25 mph. Old River Road is classified as a 2.2C Light Collector with intermittent turn lanes in the County General Plan Mobility Element.

Old Highway 395 – Old Highway 395, between Pala Mesa Drive and Old Castle Road, is generally a two-lane roadway that operates as a two-lane highway with passing option and turn pocket/striped median at Pala Mesa Drive, Dulin Road (W), W. Lilac Road, I-15 SB & NB Ramps, Palos Verdes Drive, Camino Del Rey, the RV camp grounds entrance/exit, Circle R Drive, Gopher Canyon Road, and Old Castle Road. Class II bike lanes are marked on both sides of this facility within the study area. A posted speed limit was not observed along this segment. Old Highway 395 is classified as a 4.2B Boulevard with intermittent turn lanes between Pala Mesa Drive and SR-76, a 2.1D Community Collector with improvement options between SR-76 and W. Lilac Road, a 4.2B Boulevard with intermittent turn lanes between W. Lilac Road and I-15 NB Ramps, and a 4.1B Major Road with intermittent turn lanes between I-15 NB Ramps and Old Castle Road in the County General Plan Mobility Element.

Champagne Boulevard – Champagne Boulevard, between Old Castle Road and Lawrence Welk Drive is a two-lane roadway with passing options and turn lanes. The posted speed limit is 55 mph. Class II bike lanes are marked on both sides of this facility. Champagne Boulevard is classified as a 4.1B Major Road with intermittent turn lanes within the study area in the County General Plan Mobility Element.

Mountain Ridge Road – Mountain Ridge Road, north of Circle R Drive, is a two-lane undivided private road. A speed limit was not post along this facility. However, a recent travel speed survey (as shown in Appendix B) was conducted by NDS and indicates that the average and 85th percentile travel speeds along Mountain Ridge Road are approximately 30 mph and 40 mph, respectively. This road connects to Lilac Hills Ranch Road and serves as a restricted access on the southern edge of the project.

Lilac Road – Lilac Road is generally a two-lane roadway with turn lanes at Lilac School driveway, Old Castle Road, Anthony Road, Betsworth Road, and Valley Center Road. The posted speed limit is 55 mph just west of Valley Center Road. Lilac Road is classified as a 2.2E Light Collector between Couser Canyon Road and Old Castle Road, a 2.1C Community Collector with intermittent turn lanes between Old Castle Road and Anthony Road, and a 4.2B Boulevard with intermittent turn lanes between Anthony Road and Valley Center Road in the County General Plan Mobility Element. A Class III bike route is also planned between Old Castle Road and Valley Center Road.

Valley Center Road – Valley Center Road, between Woods Valley Road and Cole Grade Road, is a four-lane roadway with a raised median or a two-way left-turn lane, Class II bike lanes and a posted speed of 45 mph. East of Cole Grade Road, Valley Center Road is a two-lane undivided roadway. Valley Center Road is classified as a 4.2A Boulevard with raised median between Woods Valley Road and Lilac Road, and between Miller Road and Vesper Road, and a 4.1A Major Road with raised median between Lilac Road and Miller Road in the County General Plan Mobility Element.

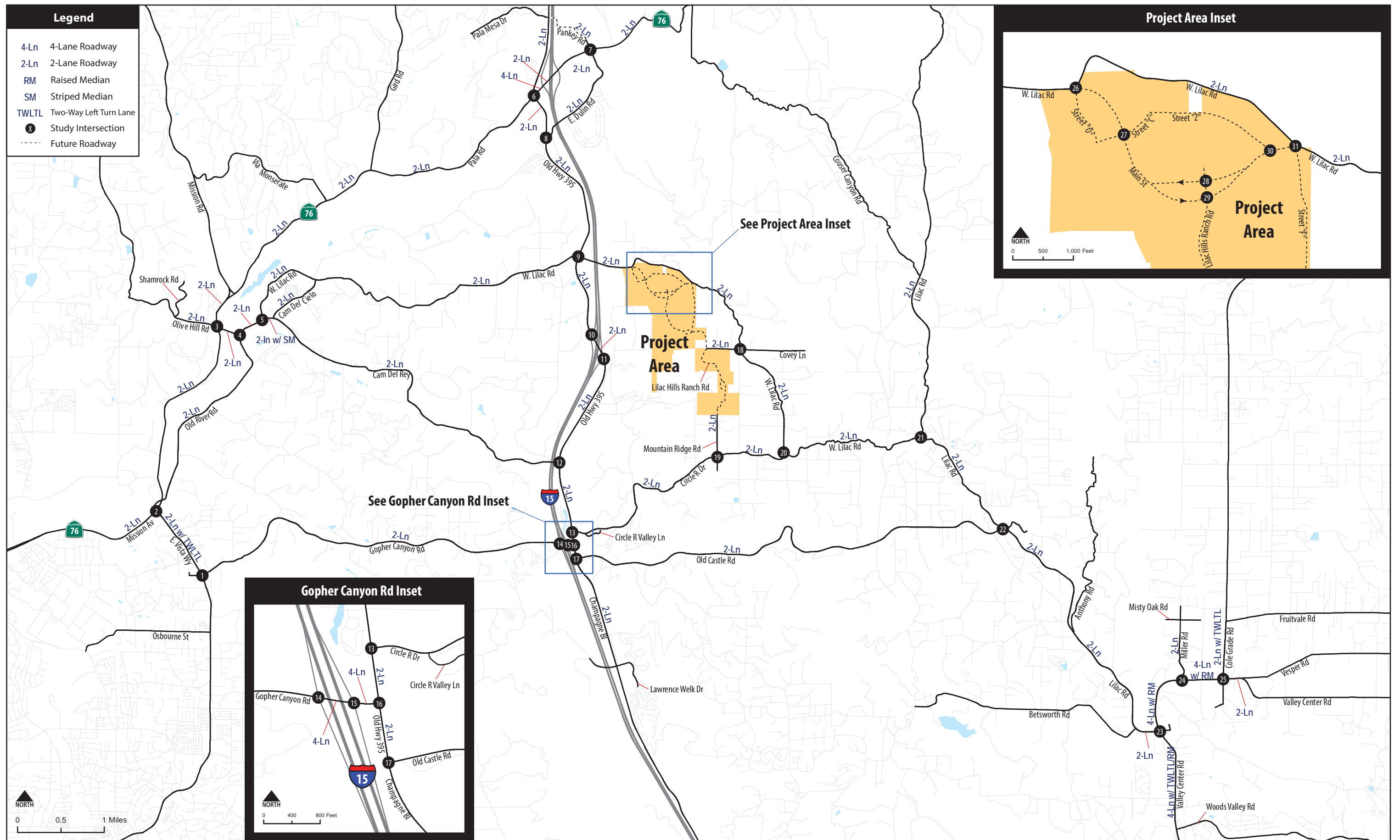
Miller Road – Miller Road, north of Valley Center Road, is a two-lane undivided roadway and is classified as a 2.3B Minor Collector with intermittent turn lanes and a Class III bike route in the County General Plan Mobility Update. A posted speed limit was not observed along this segment.

Cole Grade Road – Cole Grade Road, between Fruitvale Road and Valley Center Road, is generally a two-lane roadway with a two-way left-turn lane, Class II bike lanes and a posted speed limit of 45 mph. A 25 mph school zone is located just north of Valley Center Road. This facility is classified as a 4.2A Boulevard with raised median in the County General Plan Mobility Element.

Figure 3-1A displays existing roadway geometrics for roadway facilities within the project study area.

Study Intersections

The SANDAG Series 12 Transportation Model was utilized to perform three (3) “Select Zone” assignments which identified the number of project-related peak hour trips distributed across the transportation network. The three “Select Zone” assignments included base year, Horizon Year with Road 3, and Horizon Year without Road 3. All intersections and County Mobility Element roadways where the proposed project added 25 or more peak hour trips to the existing traffic were included for analysis, as well as all freeway and state highway segments where the proposed project added 50 or more peak hour trips in either direction.



Lilac Hills Ranch Traffic Impact Study

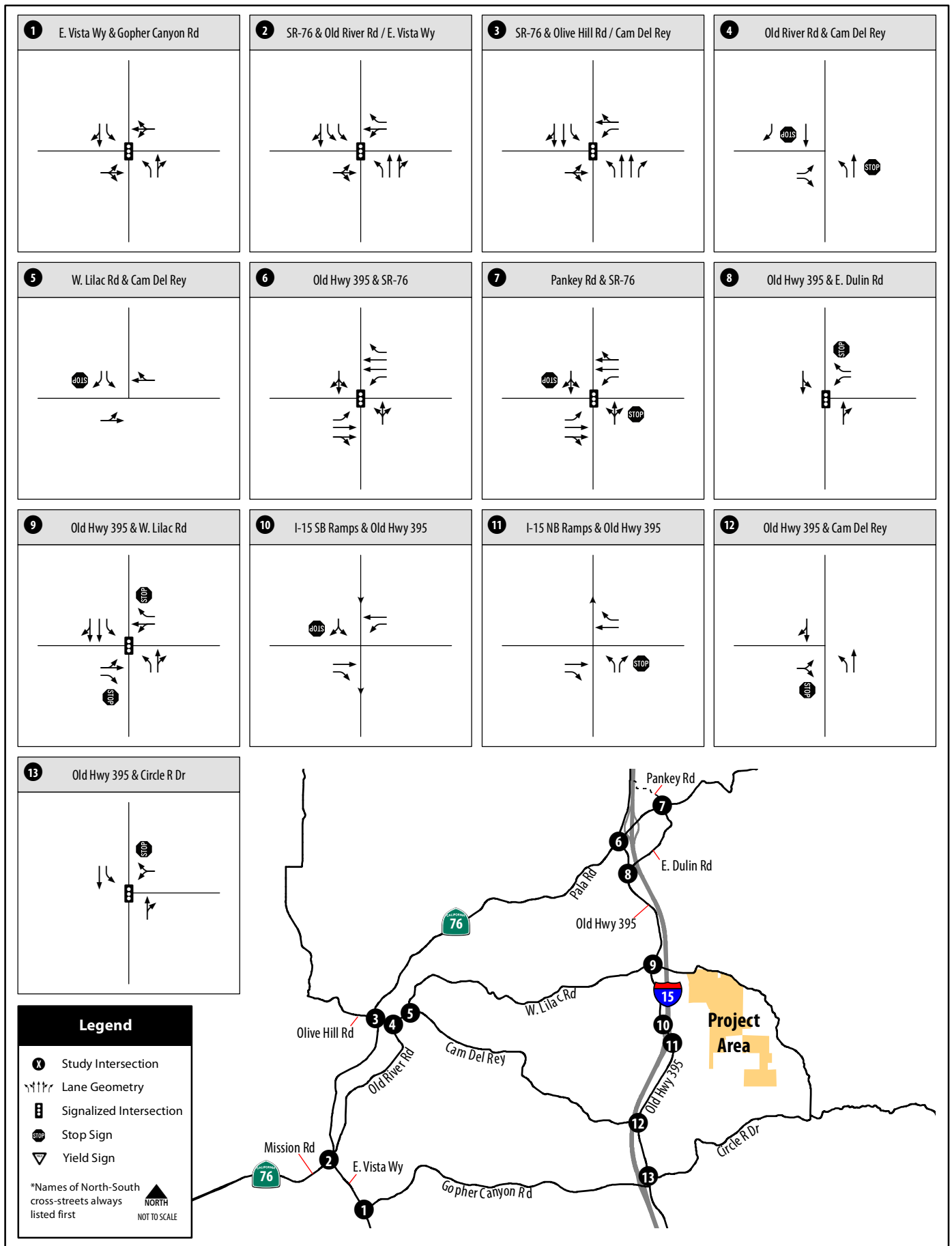
A total of thirty-one (31) key study area intersections, including 23 operated by the County of San Diego and 8 operated by Caltrans, were analyzed in this study, as shown below. Caltrans intersections are shown in italicized text.

- 1) E. Vista Way / Gopher Canyon Road
- 2) *SR-76 / Old River Road/E. Vista Way (Caltrans)*
- 3) *SR-76 / Olive Hill Road/Camino Del Rey (Caltrans)*
- 4) Old River Road / Camino Del Rey
- 5) W. Lilac Road / Camino Del Rey
- 6) *Old Highway 395 / SR-76 (Caltrans)*
- 7) *Pankey Road / SR-76 (Caltrans)*
- 8) Old Highway 395 / E. Dulin Road
- 9) Old Highway 395 / W. Lilac Road
- 10) *I-15 SB Ramps / Old Highway 395 (Caltrans)*
- 11) *I-15 NB Ramps / Old Highway 395 (Caltrans)*
- 12) Old Highway 395 / Camino Del Rey
- 13) Old Highway 395 / Circle R Drive
- 14) *I-15 SB Ramps / Gopher Canyon Road (Caltrans)*
- 15) *I-15 NB Ramps / Gopher Canyon Road (Caltrans)*
- 16) Old Highway 395 / Gopher Canyon Road
- 17) Old Highway 395 / Old Castle Road
- 18) W. Lilac Road / Covey Lane
- 19) Mountain Ridge Road / Circle R Drive
- 20) W. Lilac Road / Circle R Drive
- 21) Lilac Road / W. Lilac Road
- 22) Lilac Road / Old Castle Road
- 23) Valley Center Rd / Lilac Road
- 24) Miller Road / Valley Center Road
- 25) Cole Grade Road / Valley Center Road

Project Driveways

- 26) Street "O" / W. Lilac Road/Main Street
- 27) Main Street / Street "C"
- 28) Lilac Hills Ranch Road / Main Street North
- 29) Lilac Hills Ranch Road / Main Street South
- 30) Street "Z" / Main Street
- 31) W. Lilac Road/Street "F" / Main Street

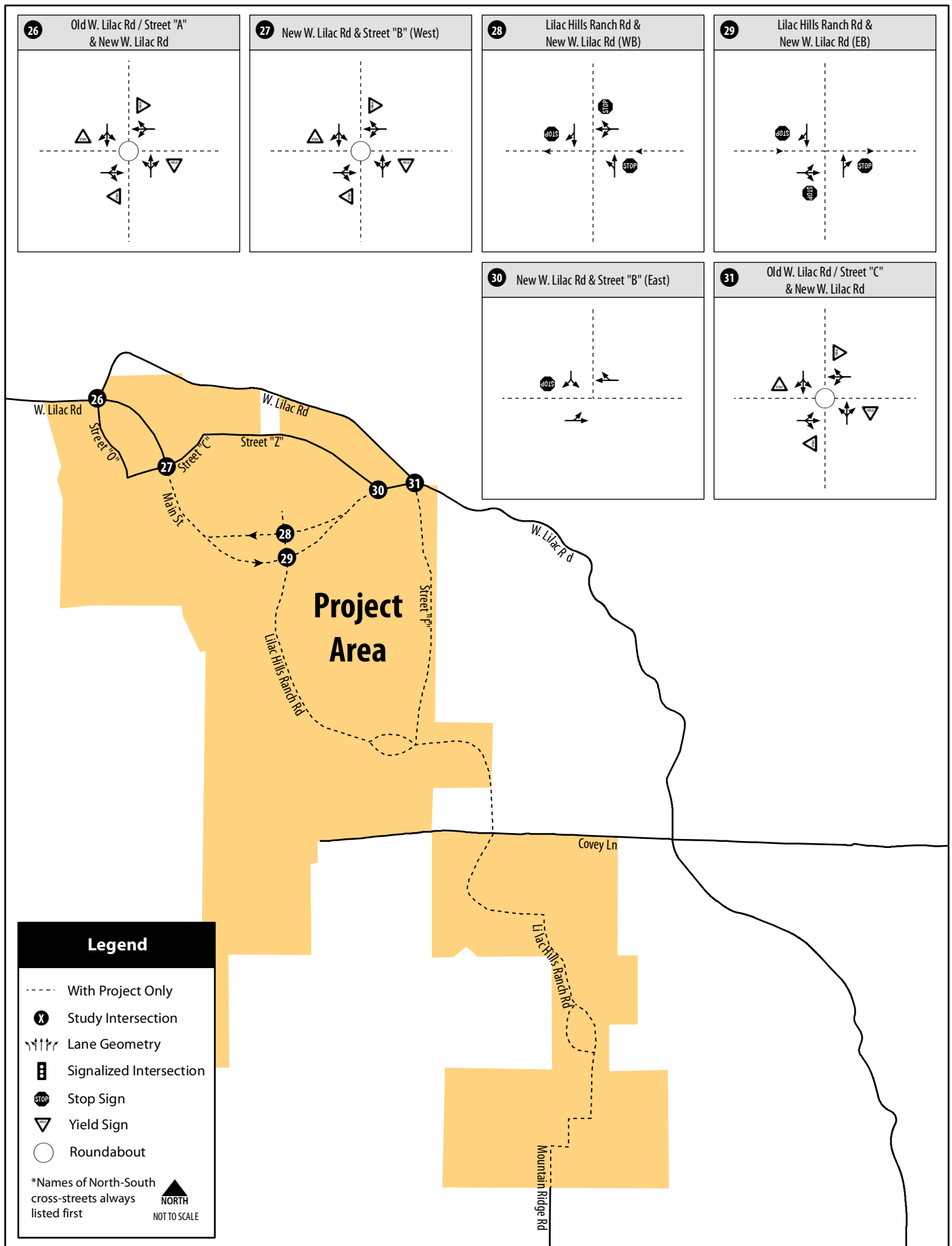
Intersections 26 through 31 are project driveways, and are included in the "Plus Project" assessments only. **Figure 3-1B** displays study area intersection lane geometrics under Existing conditions within the study area.



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Figure 3-1B (Intersections 1-13)
Intersection Geometrics - Existing Conditions





Lilac Hills Ranch Traffic Impact Study

Figure 3-1B (Intersections 24-31)
Intersection Geometries - Existing Conditions

3.2 Existing Intersection and Roadway Volumes

Figure 3-2A displays Average Daily Traffic (ADT) volumes for study area roadway and freeway segments. **Figure 3-2B** shows existing AM/PM peak hour traffic volumes for the key study area intersections. Roadway segment and study area intersection traffic count dates are referenced in the analysis tables in the following sections. The freeway segment counts were obtained from Caltrans. The traffic count data summary sheets are provided in **Appendix C**.

3.3 Existing Level of Service Analysis

Level of service analyses under Existing conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below.

Roadway Segment Analysis

Table 3.1 displays the level of service analysis results for the key study area Mobility Element roadway segments under Existing conditions.

TABLE 3.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Roadway	From	To	Cross-Section	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Dulin Road	Old Highway 395	SR-76	2-Ln	10,900	Dec-12	1,830	A
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	8,700	Dec-12	2,270	A
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	8,700	Mar-12	2,140	A
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	Oct-12	1,150	A
W. Lilac Road	Main Street	Street "F"	2-Ln	8,700	Oct-12	1,150	A
W. Lilac Road	Street "F"	Covey Lane	2-Ln	8,700	Oct-12	1,150	A
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	8,700	Mar-11	480	A
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	8,700	Mar-11	1,170	A
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	Dec-12	630	A
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	Dec-12	3,380	A
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	Sep-11	9,350	D
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	10,900	Dec-12	8,640	D

TABLE 3.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Roadway	From	To	Cross-Section	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-Ln w/ SM	13,500	Dec-12	6,730	C
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	8,700	Dec-12	4,850	A
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	10,900	Dec-12	15,320	E
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	Nov-11	12,390	A
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	Nov-11	11,870	A
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	10,900	Aug-11	4,030	B
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	10,900	Mar-11	1,770	A
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	10,900	Mar-11	6,840	C
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	Dec-12	15,120	E
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	Dec-12	21,020	F
Old River Road	SR-76	Camino Del Rey	2-Ln	10,900	Dec-12	4,070	B
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	13,500	Mar-12	4,170	B
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	10,900	Dec-12	70	A
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	8,700	Dec-12	1,150	A
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	8,700	Mar-11	2,640	A
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	Sep-11	9,010	D
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	Sep-11	8,740	D
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	Sep-11	9,620	D
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	Dec-12	21,290	C
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	Sep-11	24,280	B

**TABLE 3.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS**

Roadway	From	To	Cross-Section	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	Sep-11	22,440	C
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	Sep-11	11,490	D
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	8,000	Sep-11	1,460	A
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	Sep-11	10,660	D

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

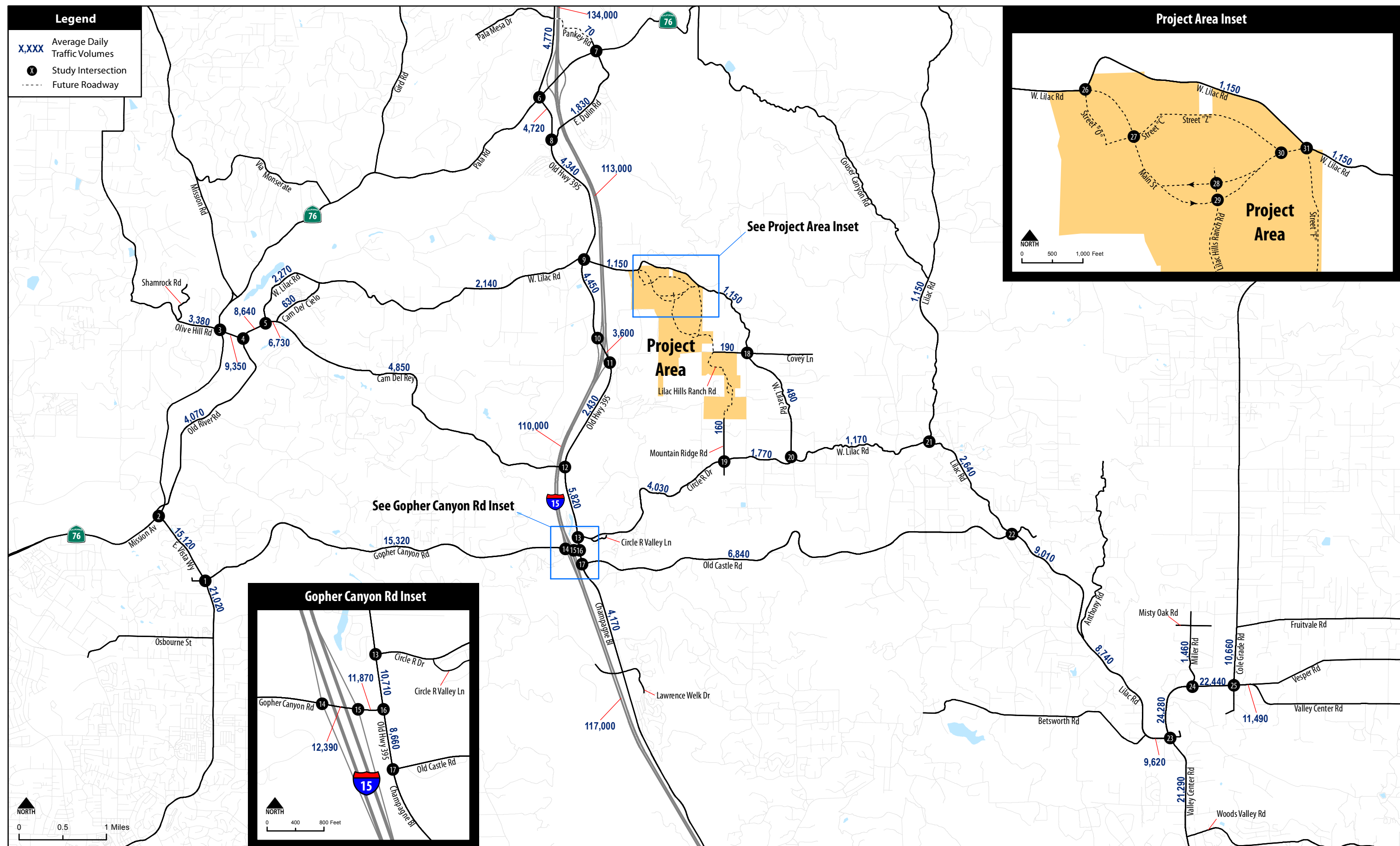
RM = Raised Median.

SM = Striped Median.

TWLTL = Two-Way Left-Turn Lane.

As shown in the table, all study roadways are currently operating at acceptable LOS D or better under Existing conditions, with the following three (3) exceptions:

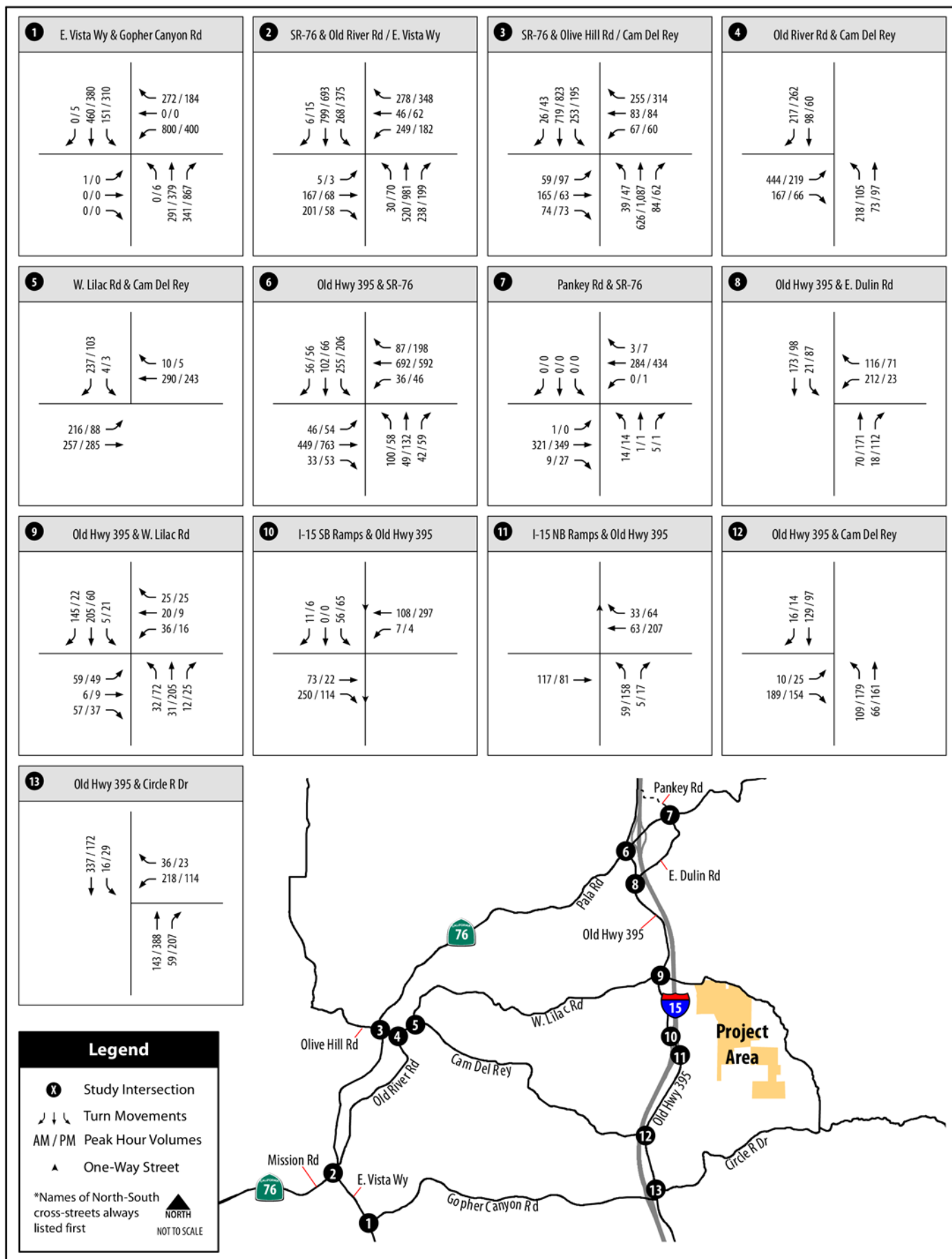
- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS E;
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E; and
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.



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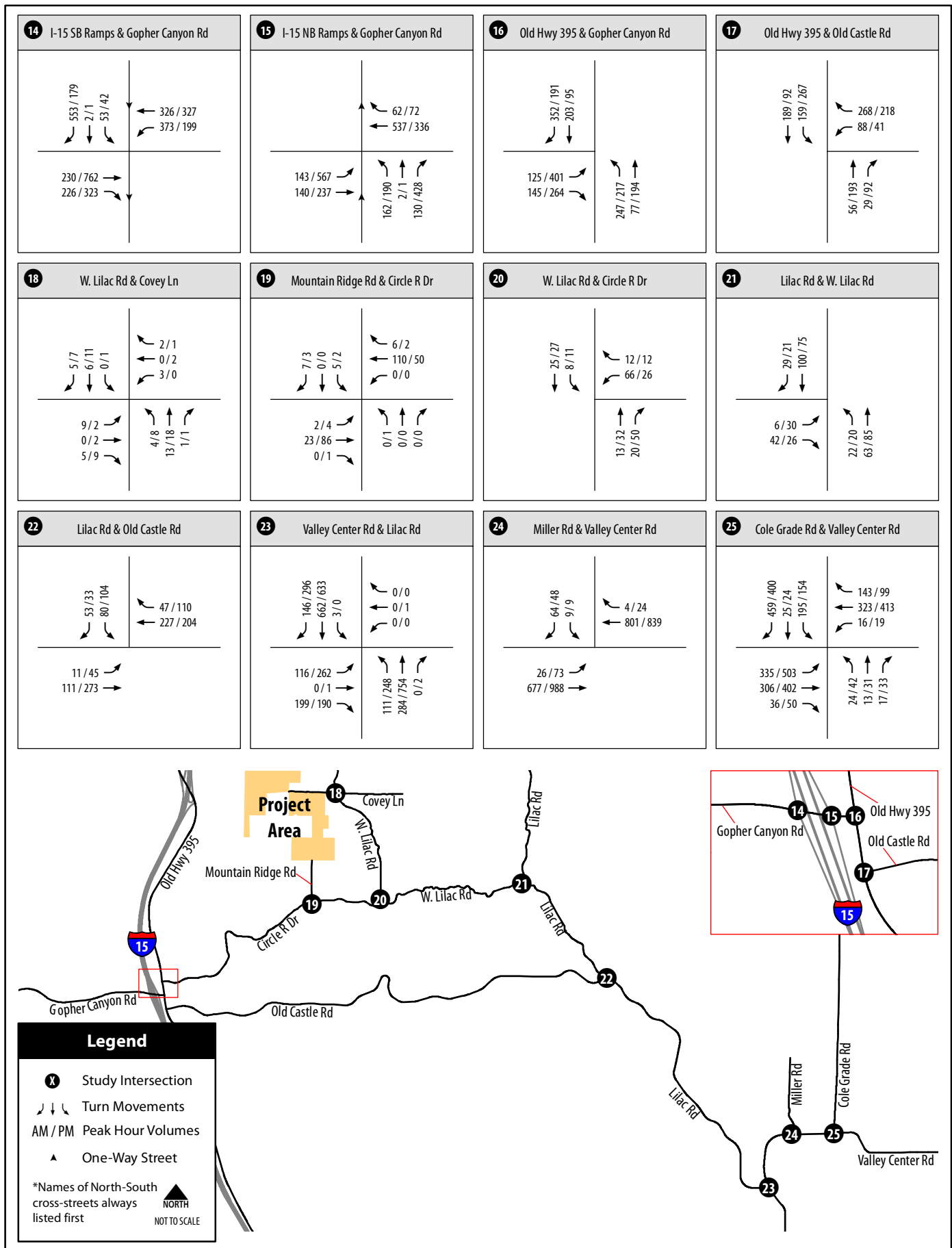
Figure 3-2A

**Roadway Average Daily Traffic Volumes -
Existing Conditions**



Lilac Hills Ranch Traffic Impact Study

Figure 3-2B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes -
Existing Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 3-2B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes -
Existing Conditions

Intersection Analysis

Table 3.2 displays intersection level of service and average vehicle delay results for the key study area intersections under Existing conditions. Level of service calculation worksheets for Existing conditions are provided in **Appendix D**.

TABLE 3.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Intersection	Traffic Control	Traffic Count Date	AM Peak Hour		PM Peak Hour	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1. E. Vista Way / Gopher Canyon Road	Signal	Nov-11	24.3	C	48.7	D
2. SR-76 / Old River Road/E. Vista Way	Signal	Nov-08	73.9	E	52.3	D
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	Sep-11	43.6	D	60.8	E
4. Old River Road / Camino Del Rey	OWSC	Nov-12	23.2	D	12.2	B
5. W. Lilac Road / Camino Del Rey	OWSC	Jan-11	15.4	C	11.0	B
6. Old Highway 395 / SR-76	Signal	Mar-11	43.0	D	42.2	D
7. Pankey Road / SR-76	TWSC	Dec-11	12.5	B	15.2	C
8. Old Highway 395 / E. Dulin Road	OWSC	Mar-11	14.6	B	11.2	B
9. Old Highway 395 / W. Lilac Road	TWSC	Mar-11	18.5	C	13.3	B
10. I-15 SB Ramps / Old Highway 395	OWSC	Mar-11	10.6	B	12.1	B
11. I-15 NB Ramps / Old Highway 395	OWSC	Mar-11	9.9	A	11.2	B
12. Old Highway 395 / Camino Del Rey	OWSC	Mar-11	10.1	B	11.0	B
13. Old Highway 395 / Circle R Drive	OWSC	Mar-11	20.4	C	22.5	C
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	Nov-11	468.2	F	173.0	F
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	Nov-11	30.5	D	1945.4	F
16. Old Highway 395 / Gopher Canyon Road	Signal	Mar-11	16.1	B	8.8	A
17. Old Highway 395 / Old Castle Road	Signal	Mar-11	13.9	B	15.7	B
18. W. Lilac Road / Covey Lane	TWSC	Oct-12	8.8	B	9.1	A
19. Mountain Ridge Road / Circle R Drive	TWSC	Mar-11	9.3	A	9.6	A
20. W. Lilac Road / Circle R Drive	OWSC	Mar-11	9.3	A	9.3	A
21. Lilac Road / W. Lilac Road	OWSC	Mar-11	9.6	A	9.9	A
22. Lilac Road / Old Castle Road	OWSC	Mar-11	11.8	B	17.8	C
23. Valley Center Rd / Lilac Road	Signal	Mar-11	10.5	B	22.6	C

TABLE 3.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Intersection	Traffic Control	Traffic Count Date	AM Peak Hour		PM Peak Hour	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
24. Miller Road / Valley Center Road	OWSC	Sep-11	16.9	C	25.2	D
25. Cole Grade Road / Valley Center Road	Signal	Sep-11	31.1	C	34.9	C

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

AWSC = All-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

OWSC = One-Way Stop Controlled.

For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

As shown in the table, all of the study area intersections are currently operating at acceptable LOS D or better, with the following four (4) exceptions:

- SR-76 / Old River Road/E. Vista Way (Caltrans) – LOS E during the AM peak hour;
- SR-76 / Olive Hill Road/Camino Del Rey (Caltrans) – LOS E during the PM peak hour;
- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours; and
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during the PM peak hour.

Two-Lane Highway Analysis

Table 3.3 displays two-lane highway level of service analysis results for Old Highway 395 under Existing conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

TABLE 3.3
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

2-Ln Highway	From	To	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
Old Highway 395	Pala Mesa Drive	SR-76	16,200	Mar-12	4,770	D or better
Old Highway 395	SR-76	E. Dulin Road	16,200	Mar-11	4,720	D or better
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	Mar-11	4,340	D or better

TABLE 3.3
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

2-Ln Highway	From	To	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	Mar-11	4,450	D or better
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	Mar-11	3,600	D or better
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	Mar-11	2,430	D or better
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	Mar-11	5,820	D or better
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	Mar-11	10,710	D or better
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	Mar-11	8,660	D or better

Source: Chen Ryan Associates; January 2013

As shown, all of the study area segments along Old Highway 395 are currently operating at acceptable LOS D or better.

Freeway Segment Analysis

Table 3.4 displays freeway level of service analysis results for I-15 under Existing conditions. The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in Table 3.4, all study area segments along I-15 currently operate at acceptable LOS D or better under Existing conditions.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing conditions using the ILV procedures as described in Chapter 2.0. Note that ramp intersections along I-15 are stop-controlled and were therefore not analyzed in this study. ILV analysis results are displayed in **Table 3.5** and analysis worksheets for the Existing conditions are provided in **Appendix E**.

TABLE 3.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Riverside County Boundary to Old Highway 395	134,000	8.4%	11,321	0.64	4	0.95	6.75%	1,957	0.833	D
I-15	Old Highway 395 to SR-76	134,000	7.4%	9,969	0.73	4	0.95	6.75%	1,984	0.844	D
I-15	SR-76 to Old Highway 395	113,000	7.8%	8,839	0.69	4	0.95	8.40%	1,661	0.707	C
I-15	Old Highway 395 to Gopher Canyon Road	110,000	8.1%	8,884	0.67	4	0.95	8.40%	1,627	0.692	C
I-15	Gopher Canyon Road to Deer Springs Road	117,000	8.1%	9,449	0.67	4	0.95	13.20%	1,770	0.753	C
I-15	Deer Springs Road to Centre City Parkway	117,000	8.0%	9,400	0.66	4	0.95	13.20%	1,752	0.745	C
I-15	Centre City Parkway to El Norte Parkway	111,000	8.0%	8,918	0.66	4	0.95	13.20%	1,662	0.707	C
I-15	El Norte Parkway to SR-78	127,000	7.9%	9,996	0.66	4	0.95	10.00%	1,836	0.781	C
I-15	SR-78 to W Valley Parkway	192,000	8.1%	15,626	0.60	5+2ML	0.95	10.00%	1,480	0.630	B
I-15	W Valley Parkway to Auto Parkway	179,000	8.1%	14,568	0.60	5+2ML	0.95	10.00%	1,380	0.587	B
I-15	Auto Parkway to W Citracado Parkway	172,000	7.8%	13,340	0.60	5+2ML	0.95	10.00%	1,256	0.534	B
I-15	W Citracado Parkway to Via Rancho Parkway	196,000	7.8%	15,201	0.60	5+2ML	0.95	7.00%	1,411	0.600	B
I-15	Via Rancho Parkway to Bernardo Drive	198,000	7.4%	14,572	0.58	5+2ML	0.95	7.00%	1,312	0.558	B
I-15	Bernardo Drive to Rancho Bernardo Road	201,000	7.4%	14,793	0.58	5+2ML	0.95	7.00%	1,332	0.567	B

TABLE 3.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,000	7.3%	15,345	0.54	5+2ML	0.95	7.00%	1,280	0.545	B
I-15	Bernardo Center Drive to Camino Del Norte	214,000	7.3%	15,712	0.54	5+2ML	0.95	7.00%	1,311	0.558	B

Source: Caltrans, Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

**TABLE 3.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING CONDITIONS**

Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,503	>1500: (Over Capacity)
	PM	1,255	1200-1500: (At Capacity)
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,202	1200-1500: (At Capacity)
	PM	1,370	1200-1500: (At Capacity)
SR-76 / Old Highway 395	AM	1,001	<1200: (Under Capacity)
	PM	1,035	<1200: (Under Capacity)

Source: Chen Ryan Associates; January 2013

As shown in the table, all three (3) intersections along SR-76 currently operate at “Under Capacity” and/or “At Capacity”, with the exception of SR-76 / Old River Road/E. Vista Way intersection which operates at “Over Capacity” during the AM peak hour.

3.4 Existing Parking, Transit, and On-Site Circulation

The current site for the proposed project generally consists of agricultural uses. Based upon field reviews, parking and on-site circulation are adequately provided. Transit services are not currently provided on or within a ¼ mile of the project site.

4.0 Project Traffic

This section describes the proposed project, including land uses and estimated trip generation, trip distribution, and trip assignment.

4.1 Project Description

The proposed Lilac Hills Ranch project is located in the Valley Center and Bonsall Community Planning Areas of the unincorporated County of San Diego with State Route 76 to the north, Valley Center proper to the east, the City of Escondido to the south, and Interstate 15 and Old Highway 395 to the west. Project access is provided at W. Lilac Road via Main Street (unrestricted access to the entire project), Circle R Drive via Mountain Ridge Road (restricted access to the senior community and unrestricted access to the church site), and Covey Lane (unrestricted access to community north of Covey Lane and a restricted access to the senior community). A secondary access is also provided via Birdsong Drive to W. Lilac Road. Gated emergency access is provided by Rodriguez Road.

The project consists of a mix of residential, commercial and institutional uses, along with parks and open space. The following list outlines the specific trip generating land uses:

Residential – a total of 1,746 units

- 903 traditional single-family detached homes;
- 375 multi-family homes (for-rent and for-sale at 20 or more dwelling units per acre);
- 468 age-restricted, single family homes (senior community); and
- Necessary facilities and amenities to serve the senior population, including a senior community center, an assisted living and group residential facility (consists of 200 beds).

Commercial – a total of 15.3 acres

- 61,500 square feet of commercial uses – local serving, small scale, and boutique style specialty retail;
- 28,500 square feet of office uses; and
- A 50-room country inn.

Institutional facilities

- A 10.7-acre church site; and
- A 12.0-acre K-8 school.

Parks and recreational facilities

- A 40,000 square-foot of private recreational center; and
- 23.8 acres of public and private parks.

A Water Reclamation Facility (WRF)

- 2.4 acres

An on-site Recycling and Green Waste Drop-off Facility (RF)

- 0.6 acres

4.2 Project Phasing

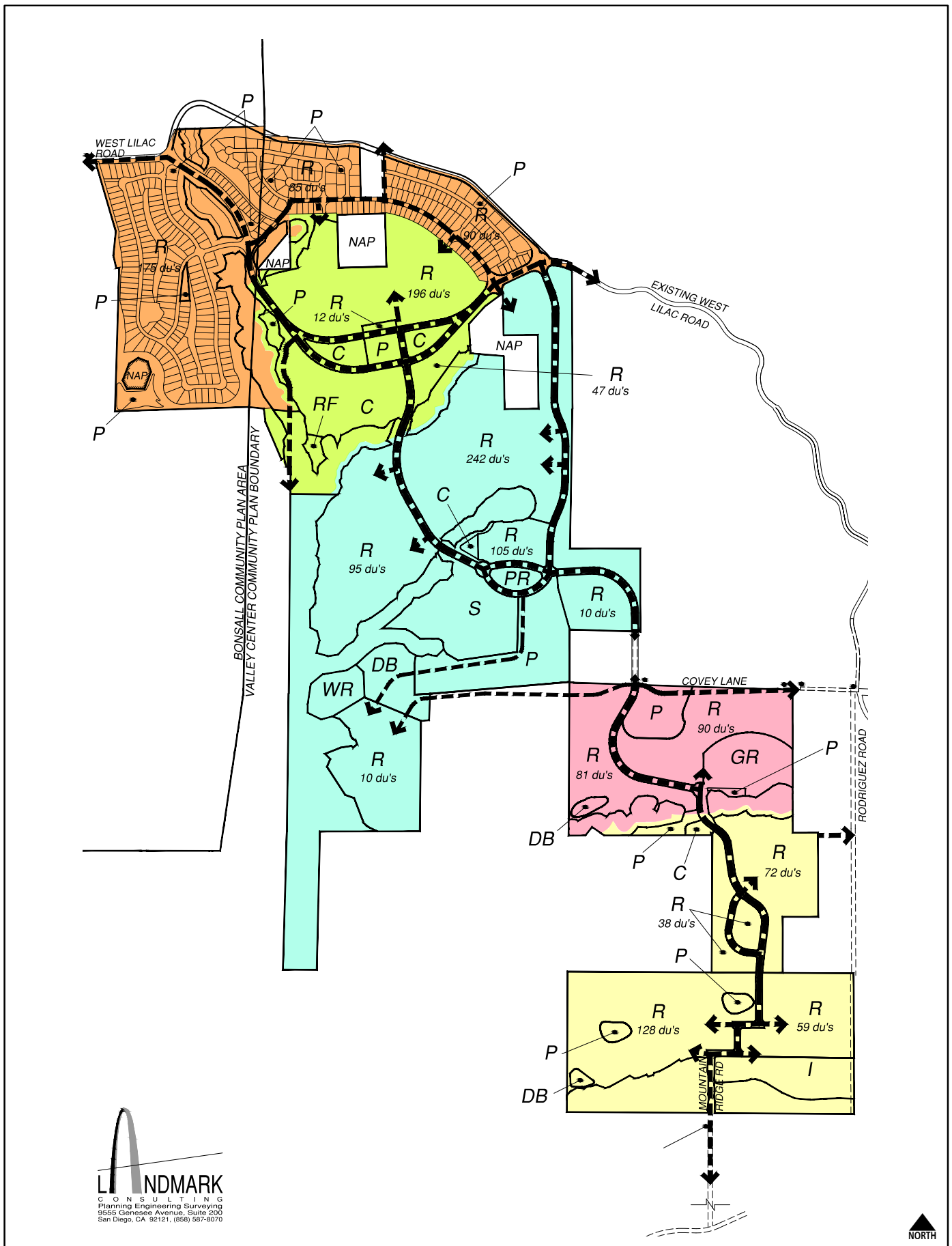
A project site plan by “Specific Plan” phasing is displayed in **Figure 4-1** with associated land use breakdowns listed in **Table 4.1** below. Note that each phase could potentially include sub-phases, however, impact and mitigation are determined based on EDUs and ADTs.

TABLE 4.1
PROJECT LAND USE BY SPECIFIC PLAN PHASING

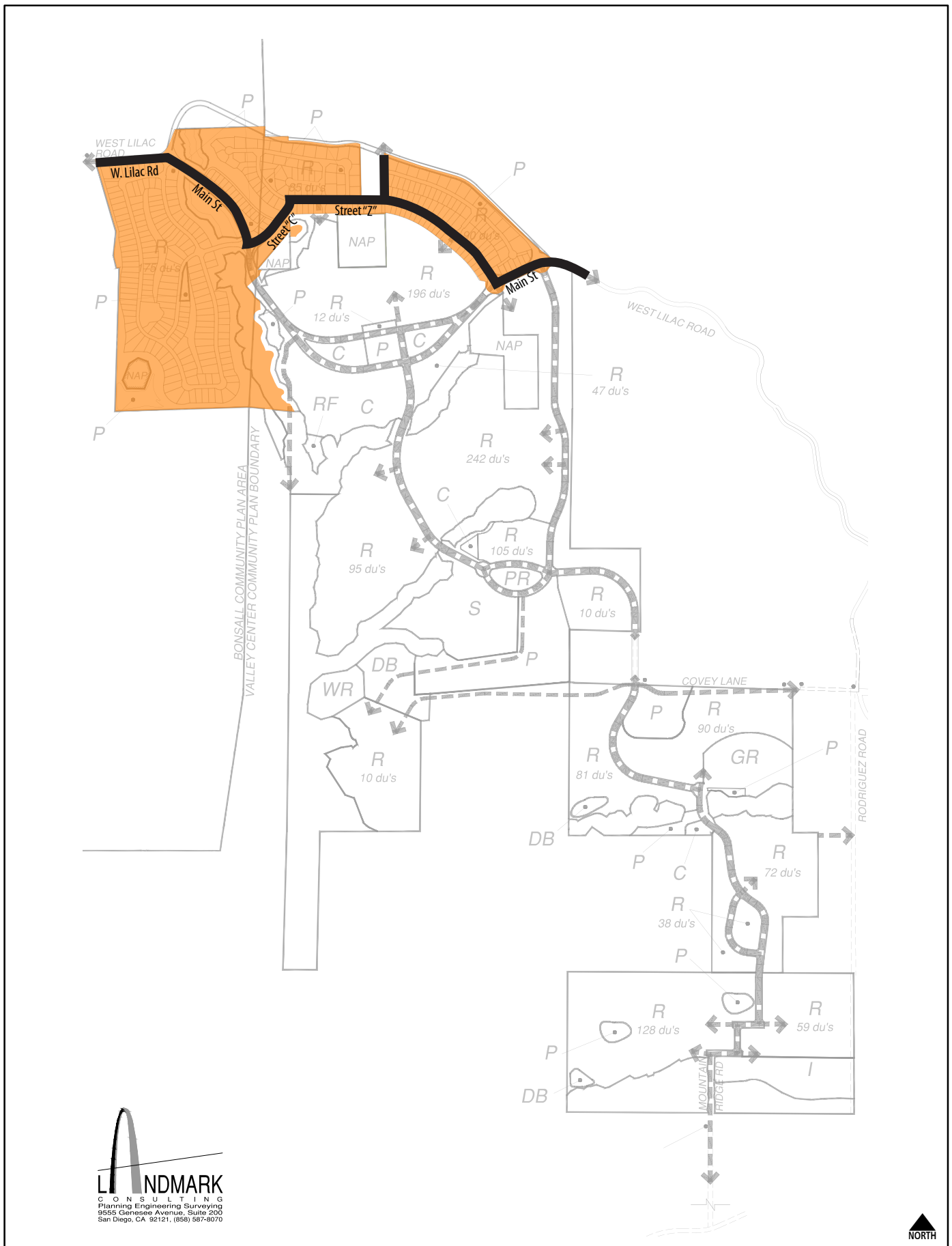
Land Use	Unit	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Single Family	DU	350	196	357	-	-
Multi-Family	DU	-	270	105	-	-
Senior Community	DU	-	-	-	171	297
Assisted Living	Bed	-	-	-	200	-
Specialty/Strip Commercial	KSF	-	55.0	4.0	-	2.5
Office	KSF	-	25.0	3.5	-	-
Country Inn / B&B	Room	-	50	-	-	-
Church	AC	-	-	-	-	10.7
Elementary School (K-5)	Student	-	-	568	-	-
Middle School (6-8)	Student	-	-	132	-	-
Recreation Center	KSF	-	-	40.0	-	-
Neighborhood/County Park	AC	3.2	2.8	12.0	3.7	2.1
Water Reclamation	AC	-	-	2.4	-	-
Recycling Center	AC	-	0.6	-	-	-

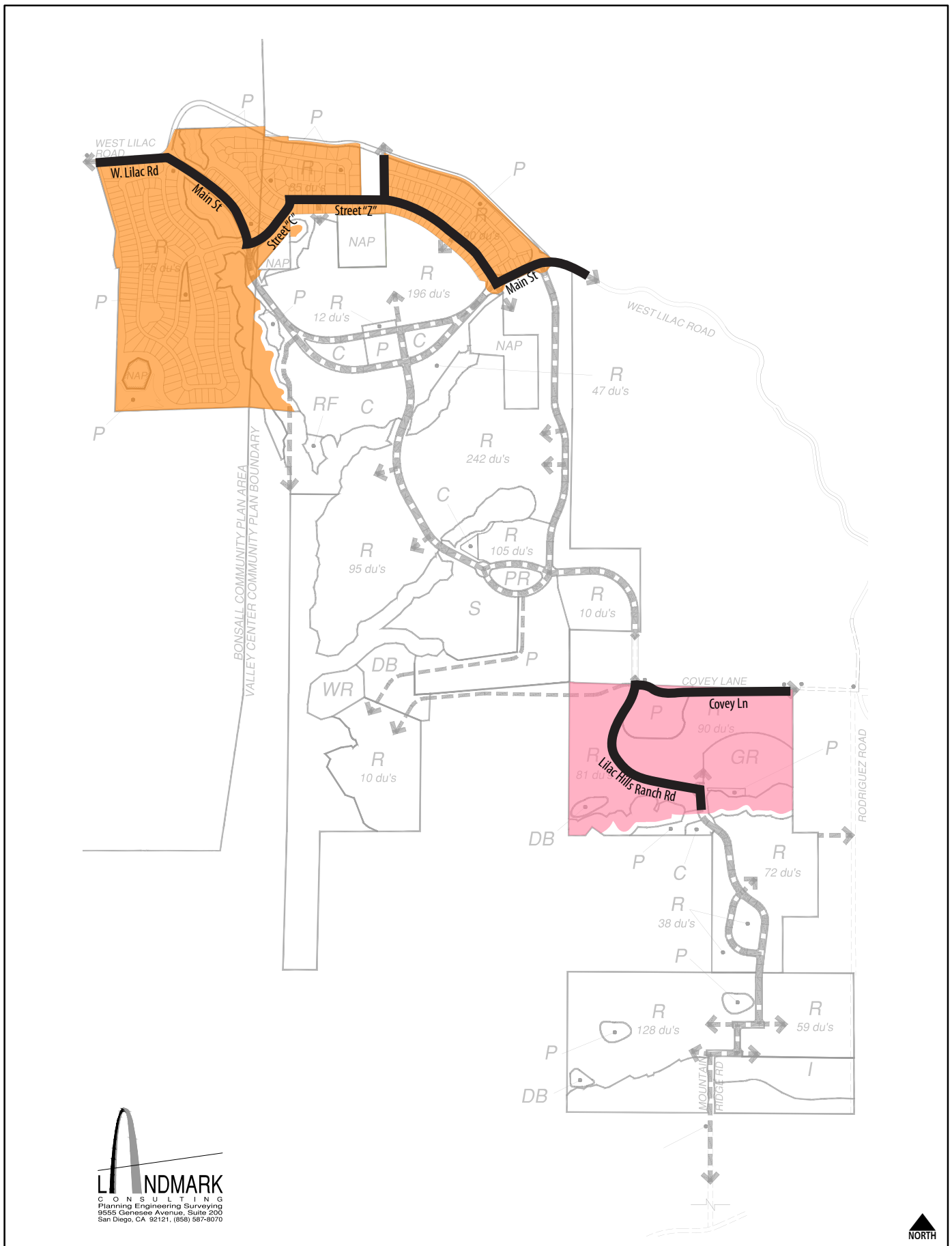
Source: Accretive Investments, Inc., Chen Ryan Associates; January 2013

For traffic impact evaluation purposes, a set of “Traffic Analysis (TA)” phases (A–E) were developed to best represent the anticipated construction phasing, as shown in **Table 4.2**. These phases are carried forward and served as the basis for traffic analysis and impact/mitigation identifications in this study. Table 4.2 also discusses the access/spine roads needed for each of the traffic analysis phases. **Figures 4-2.A** through **4-2.E** display the site plans and access requirements for each of the traffic analysis phases A-E, respectively.



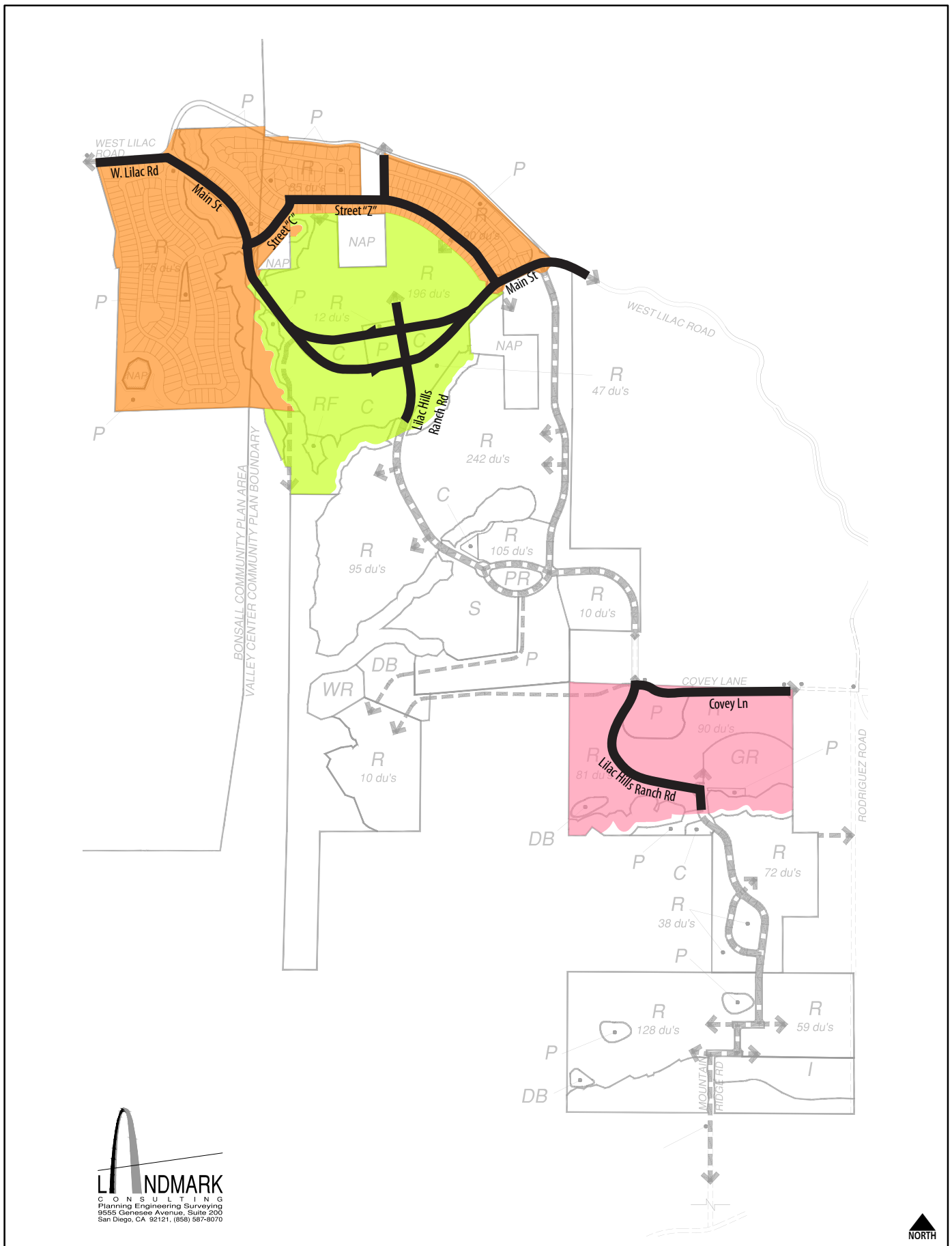
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 CONSULTING
 Planning Engineering Surveying
 9555 Genesee Avenue, Suite 200
 San Diego, CA 92121, (858) 587-8070





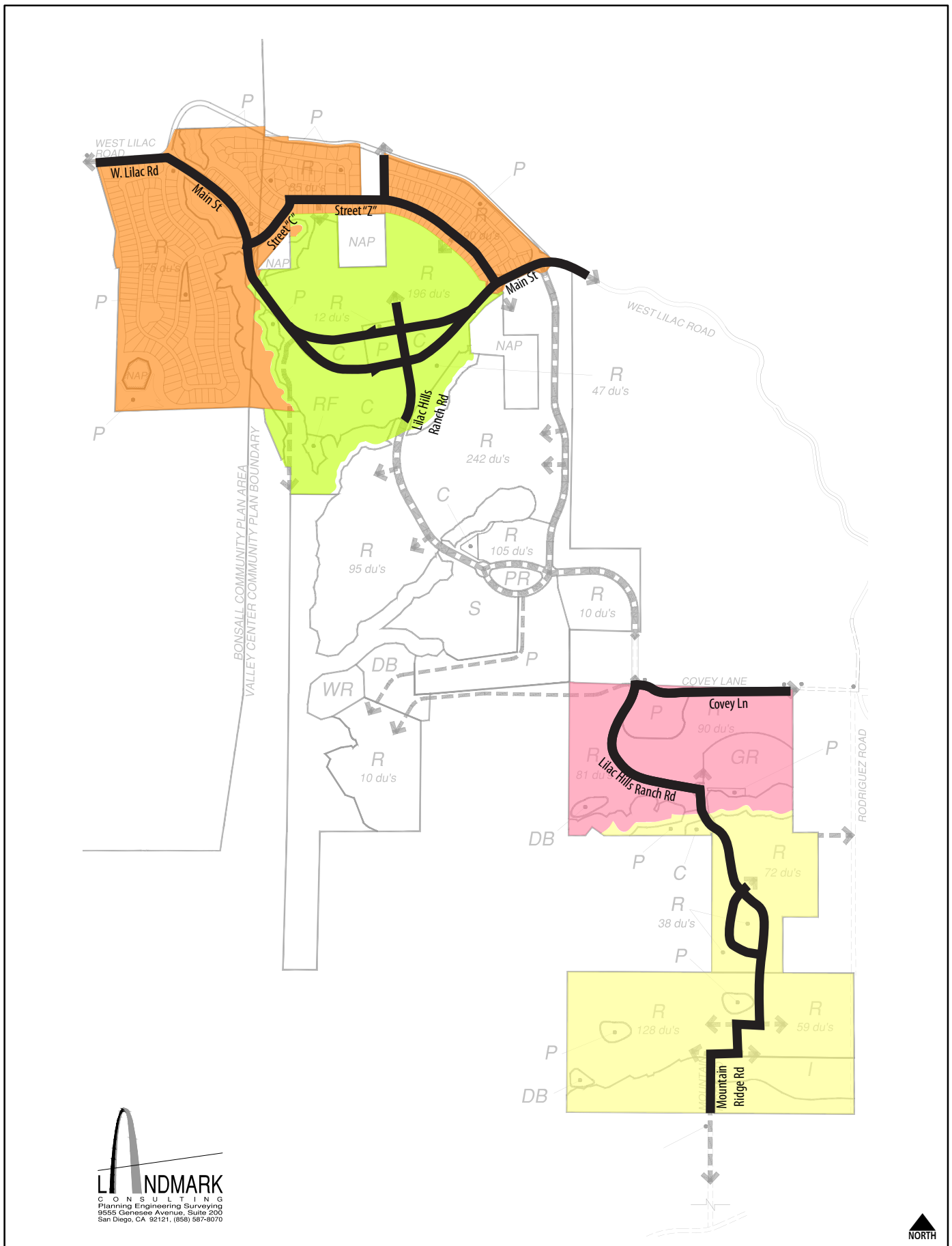
Lilac Hills Ranch Traffic Impact Study

Figure 4-2.B
Project Site Plan and Access -
Traffic Analysis Phase B

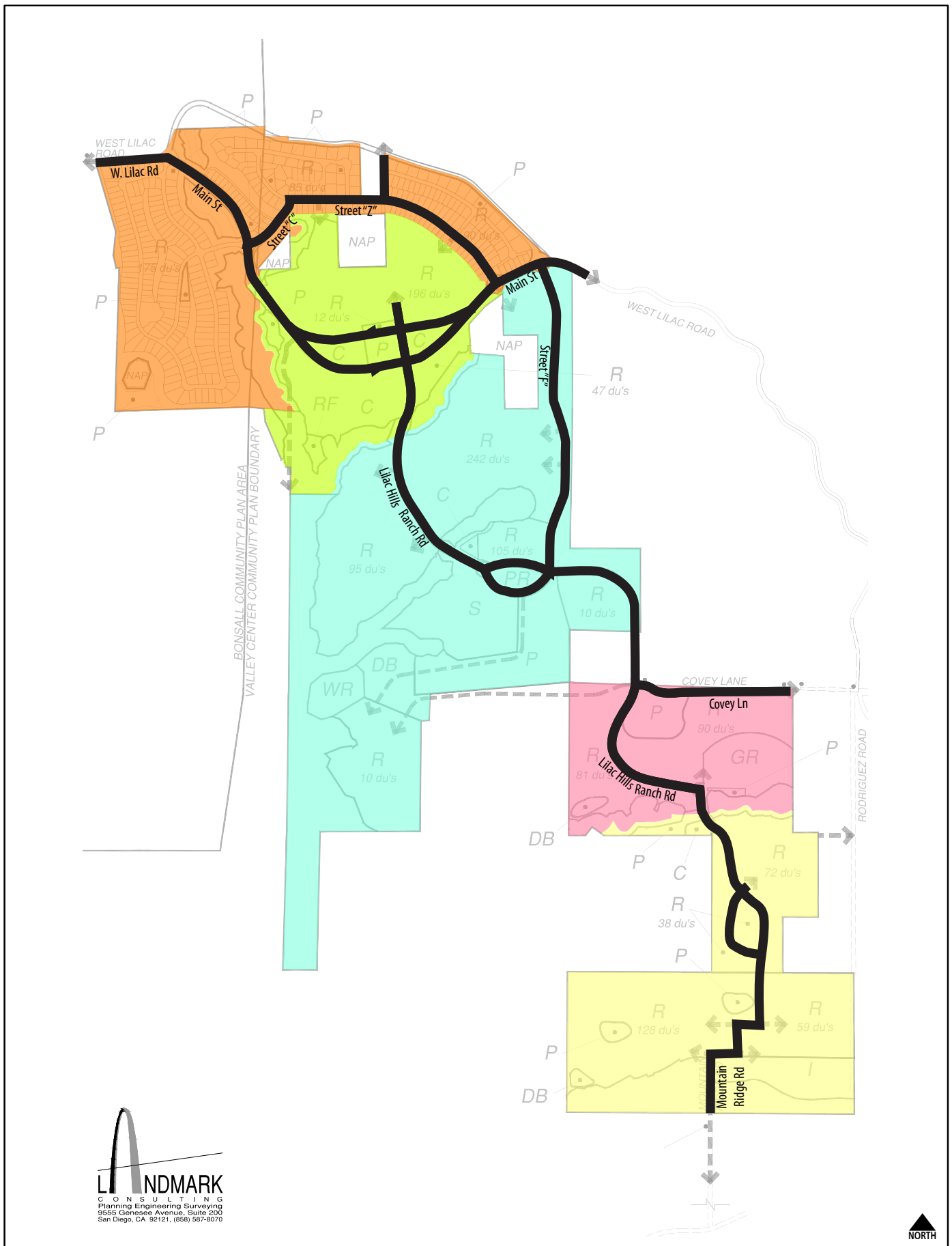


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Figure 4-2.C
Project Site Plan and Access -
Traffic Analysis Phase C



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Figure 4-2.E

Project Site Plan and Access -
Traffic Analysis Phase E (Buildout)

TABLE 4.2
TRAFFIC ANALYSIS PHASING AND ACCESS REQUIREMENTS

Phasing	Specific Plan					Access / Spine Road
	1	2	3	4	5	
Traffic Analysis Phase A	●					<ul style="list-style-type: none"> - Main St, between West Lilac Rd and St "C"; - Main St, between St "Z" and W. Lilac Rd; - St "C" and St "Z"; and - Birdsong Dr, between St "Z" and W. Lilac Rd.
Traffic Analysis Phase B	●			●		<ul style="list-style-type: none"> - All roads listed in Phase A; and - Covey Ln.
Traffic Analysis Phase C	●	●		●		<ul style="list-style-type: none"> - All roads listed in Phase B; and - Main St, between St "C" and St "Z".
Traffic Analysis Phase D	●	●		●	●	<ul style="list-style-type: none"> - All roads listed in Phase C; and - Lilac Hills Ranch Rd, between Covey Ln and Mountain Ridge Rd.
Traffic Analysis Phase E (Buildout)	●	●	●	●	●	<ul style="list-style-type: none"> - All roads listed in Phase D; - Lilac Hills Ranch Rd, north of Covey Ln to Main St; and - St "F", between W. Lilac Rd and Lilac Hills Ranch Rd.

Source: Accretive Investments, Inc., Chen Ryan Associates; January 2013

As displayed in the table, TA **Phase A** includes Phase 1 of the "Specific Plan"; TA **Phase B** includes Phases 1 and 4; TA **Phase C** includes Phases 1, 2, and 4; TA **Phase D** includes Phases 1, 2, 4, and 5; and **Phase E** includes all five Specific Plan phases.

Table 4.3 shows the project land use assumptions by traffic analysis phasing which represents the anticipated construction phasing. Phase E indicates project buildout.

TABLE 4.3
PROJECT LAND USES BY TRAFFIC ANALYSIS PHASING

Land Use	Unit	Phase A	Phase B	Phase C	Phase D	Phase E
Single Family	DU	350	350	546	546	903
Multi-Family	DU	-	-	270	270	375
Senior Community	DU	-	171	171	468	468
Assisted Living	Bed	-	200	200	200	200
Specialty/Strip Commercial	KSF	-	-	55.0	57.5	61.5
Office	KSF	-	-	25.0	25.0	28.5
Country Inn / B&B	Room	-	-	50	50	50
Church	AC	-	-	-	10.7	10.7
Elementary School (K-5)	Student	-	-	-	-	568
Middle School (6-8)	Student	-	-	-	-	132
Recreation Center	KSF	-	-	-	-	40.0
Neighborhood/County Park	AC	3.2	6.9	9.7	11.8	23.8
Water Reclamation	AC	-	-	-	-	2.4
Recycling Center	AC	-	-	0.6	0.6	0.6

Source: Accretive Investments, Inc., Chen Ryan Associates; January 2013

4.3 Project Trip Generation, Distribution, and Assignment

4.3.1 Project Trip Generation

Trip generation rates for the proposed Lilac Hills Ranch project were developed utilizing SANDAG's *Guide to Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, April 2002). **Tables 4.4 through 4.8** display daily, as well as AM and PM peak hour project trip generation for the five TA phases (A-E), respectively.

TABLE 4.4
LILAC HILLS RANCH PROJECT TRIP GENERATION
PHASE A

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	350	10 / DU	3,500	8%	280 (84-in / 196-out)	10%	350 (245-in / 105-out)
Neighborhood/County Park	3.2	5 / AC	16	4%	1 (0-in / 0-out)	8%	1 (1-in / 1-out)
Total by Phase A			3,516		281 (84-in / 196-out)		351 (246-in / 106-out)

Source: Chen Ryan Associates; January 2013

As shown in Table 4.4, Phase A of the proposed Lilac Hills Ranch project would generate a total of 3,516 daily trips, including 281 AM peak hour trips and 351 PM peak hour trips.

TABLE 4.5
LILAC HILLS RANCH PROJECT TRIP GENERATION
PHASE B

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	350	10 / DU	3,500	8%	280 (84-in / 196-out)	10%	350 (245-in / 105-out)
Senior Community	171	4 / DU	684	5%	34 (14-in / 21-out)	7%	48 (29-in / 19-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Neighborhood/County Park	6.9	5 / AC	35	4%	1 (1-in / 1-out)	8%	3 (1-in / 1-out)
Total by Phase B			4,719		336 (110-in / 225-out)		441 (295-in / 146-out)

Source: Chen Ryan Associates; January 2013

As shown in Table 4.5, the proposed Lilac Hills Ranch project would generate a total of 4,719 daily trips by the end of Phase B, including 336 AM peak hour trips and 441 PM peak hour trips.

TABLE 4.6
LILAC HILLS RANCH PROJECT TRIP GENERATION
PHASE C

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	546	10 / DU	5,460	8%	437 (131-in / 306-out)	10%	546 (382-in / 164-out)
Multi-Family	270	6 / DU	1,620	8%	130 (26-in / 104-out)	9%	146 (102-in / 44-out)
Senior Community	171	4 / DU	684	5%	34 (14-in / 21-out)	7%	48 (29-in / 19-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Specialty/Strip Commercial	55.0	40 / KSF	2,200	3%	66 (40-in / 26-out)	9%	198 (99-in / 99-out)
Office	25.0	14 / KSF	350	15%	53 (47-in / 5-out)	15%	53 (11-in / 42-out)
Country Inn / B&B	50	9 / Room	450	8%	36 (14-in / 22-out)	9%	41 (24-in / 16-out)
Neighborhood/County Park	9.7	5 / AC	49	4%	2 (1-in / 1-out)	8%	4 (2-in / 2-out)
Recycling Center	0.6	6 / AC	4	11%	0 (0-in / 0-out)	10%	0 (0-in / 0-out)
Total by Phase C			11,317		778 (285-in / 492-out)		1,075 (669-in / 406-out)

Source: Chen Ryan Associates; January 2013

As shown in Table 4.6, the proposed Lilac Hills Ranch project would generate a total of 11,317 daily trips by the end of Phase C, including 778 AM peak hour trips and 1,075 PM peak hour trips.

**TABLE 4.7
LILAC HILLS RANCH PROJECT TRIP GENERATION
PHASE D**

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	546	10 / DU	5,460	8%	437 (131-in / 306-out)	10%	546 (382-in / 164-out)
Multi-Family	270	6 / DU	1,620	8%	130 (26-in / 104-out)	9%	146 (102-in / 44-out)
Senior Community	468	4 / DU	1,872	5%	94 (37-in / 56-out)	7%	131 (79-in / 52-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Specialty/Strip Commercial	57.5	40 / KSF	2,300	3%	69 (41-in / 28-out)	9%	207 (104-in / 104-out)
Office	25.0	14 / KSF	350	15%	53 (47-in / 5-out)	15%	53 (11-in / 42-out)
Country Inn / B&B	50	9 / Room	450	8%	36 (14-in / 22-out)	9%	41 (24-in / 16-out)
Church	10.7	30 / AC	321	5%	16 (10-in / 6-out)	8%	26 (13-in / 13-out)
Neighborhood/County Park	11.8	5 / AC	59	4%	2 (1-in / 1-out)	8%	5 (2-in / 2-out)
Recycling Center	0.6	6 / AC	4	11%	0 (0-in / 0-out)	10%	0 (0-in / 0-out)
Total by Phase D			12,936		856 (320-in / 536-out)		1,194 (737-in / 457-out)

Source: Chen Ryan Associates; January 2013

As shown in Table 4.7, the proposed Lilac Hills Ranch project would generate a total of 12,936 daily trips by the end of Phase D, including 856 AM peak hour trips and 1,194 PM peak hour trips.

TABLE 4.8
LILAC HILLS RANCH PROJECT TRIP GENERATION
PHASE E – BUILDOUT

Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	903	10 / DU	9,030	8%	722 (217-in / 506-out)	10%	903 (632-in / 271-out)
Multi-Family	375	6 / DU	2,250	8%	180 (36-in / 144-out)	9%	203 (142-in / 61-out)
Senior Community	468	4 / DU	1,872	5%	94 (37-in / 56-out)	7%	131 (79-in / 52-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Specialty/Strip Commercial	61.5	40 / KSF	2,460	3%	74 (44-in / 30-out)	9%	221 (111-in / 111-out)
Office	28.5	14 / KSF	399	15%	60 (54-in / 6-out)	15%	60 (12-in / 48-out)
Country Inn / B&B	50	9 / Room	450	8%	36 (14-in / 22-out)	9%	41 (24-in / 16-out)
Church	10.7	30 / AC	321	5%	16 (10-in / 6-out)	8%	26 (13-in / 13-out)
Elementary School (K-5)	568	1.6 / Student	909	32%	291 (175-in / 116-out)	9%	82 (33-in / 49-out)
Middle School (6-8)	132	1.4 / Student	185	30%	56 (33-in / 22-out)	9%	17 (7-in / 10-out)
Recreation Center ¹	40.0	22.88 / KSF	915	12%	108 (57-in / 51-out)	10%	95 (38-in / 57-out)
Neighborhood/County Park	23.8	5 / AC	119	4%	5 (2-in / 2-out)	8%	10 (5-in / 5-out)
Water Reclamation	2.4	6 / AC	14	11%	2 (1-in / 1-out)	10%	1 (1-in / 1-out)
Recycling Center	0.6	6 / AC	4	11%	0 (0-in / 0-out)	10%	0 (0-in / 0-out)
Total by Phase E - Buildout			19,428		1,663 (693-in / 970-out)		1,829 (1,115-in / 714-out)

Source: Chen Ryan Associates; January 2013

Note:

¹. Trip generation rate is based on ITE Trip Generation Manual 8th Edition.

As shown in Table 4.8, the proposed Lilac Hills Ranch project would generate a total of 19,428 daily trips by the end of Phase E (project buildout), including 1,663 AM peak hour trips and 1,829 PM peak hour trips.

Each trip generation rate includes a number of trip purposes, generally categorized as home based work (HBW), home based other (HBO, consists of shopping, school, recreation, etc.) and non-home based (NHB) trips. For developments with mixed land uses, many of the trips generated would have been served on-site. For example, shopping trips (a part of HBO) would be satisfied by the commercial uses within the project site, as would school trips and recreational trips. The same logic would apply to the trip production/attraction interactions between office and commercial uses. It is a common practice, both nationwide and in the San Diego region, to allow for trip reductions reflecting the internal capture of trips associated with mixed-use developments resulting from the fact that complementary land uses (i.e. residential and commercial) help to serve each other's needs on-site.

The proposed Lilac Hills Ranch project includes residential, commercial, office, school, and recreational uses and not all trips generated would leave the project site given the nature of the project land uses. Estimates for internal versus external trip generation percentages were developed based upon likely origins/destinations of each land use type. For the purpose of this study, it was assumed that approximately 10% of the trips generated by residential (single-family, multi-family, and senior community), office, and country inn would remain internal to the project site. Other land uses are proposed primarily to support shopping, school, recreational, etc. needs (HBO) for residents of the Lilac Hills Ranch project. As a result, higher internal capture rates were assumed for these land uses, including 50% for commercial, church, recreation center, water reclamation facility, and recycling center, and 80% for school and parks. Project trips were disaggregated into those that would remain within the project site (internally captured), and those that would leave the project site (external trips). Only external trips were distributed and assigned to the study area roadways at project buildout (Phase E).

Table 4.9 displays the proportion of internal and external project trips at project buildout. As shown, a rate of 22% internal trip capture was derived based on interaction among each land use type as described above. For comparison purposes, a SANDAG Select Zone Assignment was conducted with the entire project land uses modeled in one Traffic Analysis Zone (TAZ) and the model output indicated a 28.8% internal capture rate for this project. The SANDAG model output is included in **Appendix F**.

4.2.3 Project Trip Distribution

The distribution of the external project trips was based upon three (3) computer generated "Select Zone" assignments utilizing the Series 12 Year 2050 SANDAG Transportation Model, including 2008 base year, 2050 with Road 3, and without Road 3. The "Select Zone" assignments are included in **Appendix G**. Separate trip distributions were developed in conjunction with the varying roadway networks assumed under each of the analysis scenarios, as discussed below:

- Existing + Project (phased) – based upon the "2008 base year" assignments with minor adjustments reflecting project access and frontage assumptions for each of the traffic analysis phases. **Appendix H** includes project trip distribution by phase along project frontage and access roads.

TABLE 4.9
LILAC HILLS RANCH INTERNAL AND EXTERNAL PROJECT TRIPS
PHASE E – BUILDOUT

Land Use	Quantity	Total Trips				Internal Trips				External Trips		
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Single Family	903 DU	9,030	722 (217-in / 506-out)	903 (632-in / 271-out)	10%	903	72 (22-in / 51-out)	90 (63-in / 27-out)	90%	8,127	650 (195-in / 455-out)	813 (569-in / 244-out)
Multi-Family	375 DU	2,250	180 (36-in / 144-out)	203 (142-in / 61-out)	10%	225	18 (4-in / 14-out)	20 (14-in / 6-out)	90%	2,025	162 (32-in / 130-out)	182 (128-in / 55-out)
Senior Community	468 DU	1,872	94 (37-in / 56-out)	131 (79-in / 52-out)	10%	187	9 (4-in / 6-out)	13 (8-in / 5-out)	90%	1,685	84 (34-in / 51-out)	118 (71-in / 47-out)
Assisted Living	200 bed	500	20 (12-in / 8-out)	40 (20-in / 20-out)	10%	50	2 (1-in / 1-out)	4 (2-in / 2-out)	90%	450	18 (11-in / 7-out)	36 (18-in / 18-out)
Specialty/Strip Commercial	61.5 KSF	2,460	74 (44-in / 30-out)	221 (111-in / 111-out)	50%	1,230	37 (22-in / 15-out)	111 (55-in / 55-out)	50%	1,230	37 (22-in / 15-out)	111 (55-in / 55-out)
Office	28.5 KSF	399	60 (54-in / 6-out)	60 (12-in / 48-out)	10%	40	6 (5-in / 1-out)	6 (1-in / 5-out)	90%	359	54 (48-in / 5-out)	54 (11-in / 43-out)
Country Inn / B&B	50 room	450	36 (14-in / 22-out)	41 (24-in / 16-out)	10%	45	4 (1-in / 2-out)	4 (2-in / 2-out)	90%	405	32 (13-in / 19-out)	36 (22-in / 15-out)
Church	10.7 AC	321	16 (10-in / 6-out)	26 (13-in / 13-out)	50%	161	8 (5-in / 3-out)	13 (6-in / 6-out)	50%	161	8 (5-in / 3-out)	13 (6-in / 6-out)
Elementary School (K-5)	568 student	909	291 (175-in / 116-out)	82 (33-in / 49-out)	80%	727	233 (140-in / 93-out)	65 (26-in / 39-out)	20%	182	58 (35-in / 23-out)	16 (7-in / 10-out)
Middle School (6-8)	132 student	185	56 (33-in / 22-out)	17 (7-in / 10-out)	80%	148	44 (27-in / 18-out)	13 (5-in / 8-out)	20%	37	11 (7-in / 4-out)	3 (1-in / 2-out)
Recreation Center	40.0 KSF	915	108 (57-in / 51-out)	95 (38-in / 57-out)	50%	458	54 (29-in / 25-out)	48 (19-in / 29-out)	50%	458	54 (29-in / 25-out)	48 (19-in / 29-out)
Neighborhood/ County Park	23.8 AC	119	5 (2-in / 2-out)	10 (5-in / 5-out)	80%	95	4 (2-in / 2-out)	8 (4-in / 4-out)	20%	24	1 (0-in / 0-out)	2 (1-in / 1-out)

TABLE 4.9
LILAC HILLS RANCH INTERNAL AND EXTERNAL PROJECT TRIPS
PHASE E – BUILDOUT

Land Use	Quantity	Total Trips				Internal Trips				External Trips		
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Water Reclamation	2.4 AC	14	2 (1-in / 1-out)	1 (1-in / 1-out)	50%	7	1 (0-in / 0-out)	1 (0-in / 0-out)	50%	7	1 (0-in / 0-out)	1 (0-in / 0-out)
Recycling Center	0.6 AC	4	0 (0-in / 0-out)	0 (0-in / 0-out)	50%	2	0 (0-in / 0-out)	0 (0-in / 0-out)	50%	2	0 (0-in / 0-out)	0 (0-in / 0-out)
Total		19,428	1,663 (693-in / 970-out)	1,829 (1,115-in / 714-out)	22%	4,278	492 (261-in / 231-out)	396 (207-in / 189-out)	78%	15,151	1,171 (431-in / 739-out)	1,433 (908-in / 525-out)

Source: Chen Ryan Associates; January 2013

-
- Existing + Cumulative Projects + Project (buildout) – based on the “Existing Plus Project (Phase E – Buildout)” assignments due to transportation network similarities. Pankey Road, north of SR-76 would be constructed with cumulative projects such as Campus Park, Campus Park West, and Meadowood.
 - Horizon Year with Road 3 Base + Project (buildout) – based on the “2050 with Road 3” assignments with minor adjustments reflecting project access and frontage assumptions for each of the traffic analysis phases. Appendix H includes project trip distribution by phase along project frontage and access roads.
 - Horizon Year without Road 3 Base + Project (buildout) – based on the “2050 without Road 3” assignments with minor adjustments reflecting project access and frontage assumptions for each of the traffic analysis phases. Appendix H includes project trip distribution by phase along the project frontage and access roads.

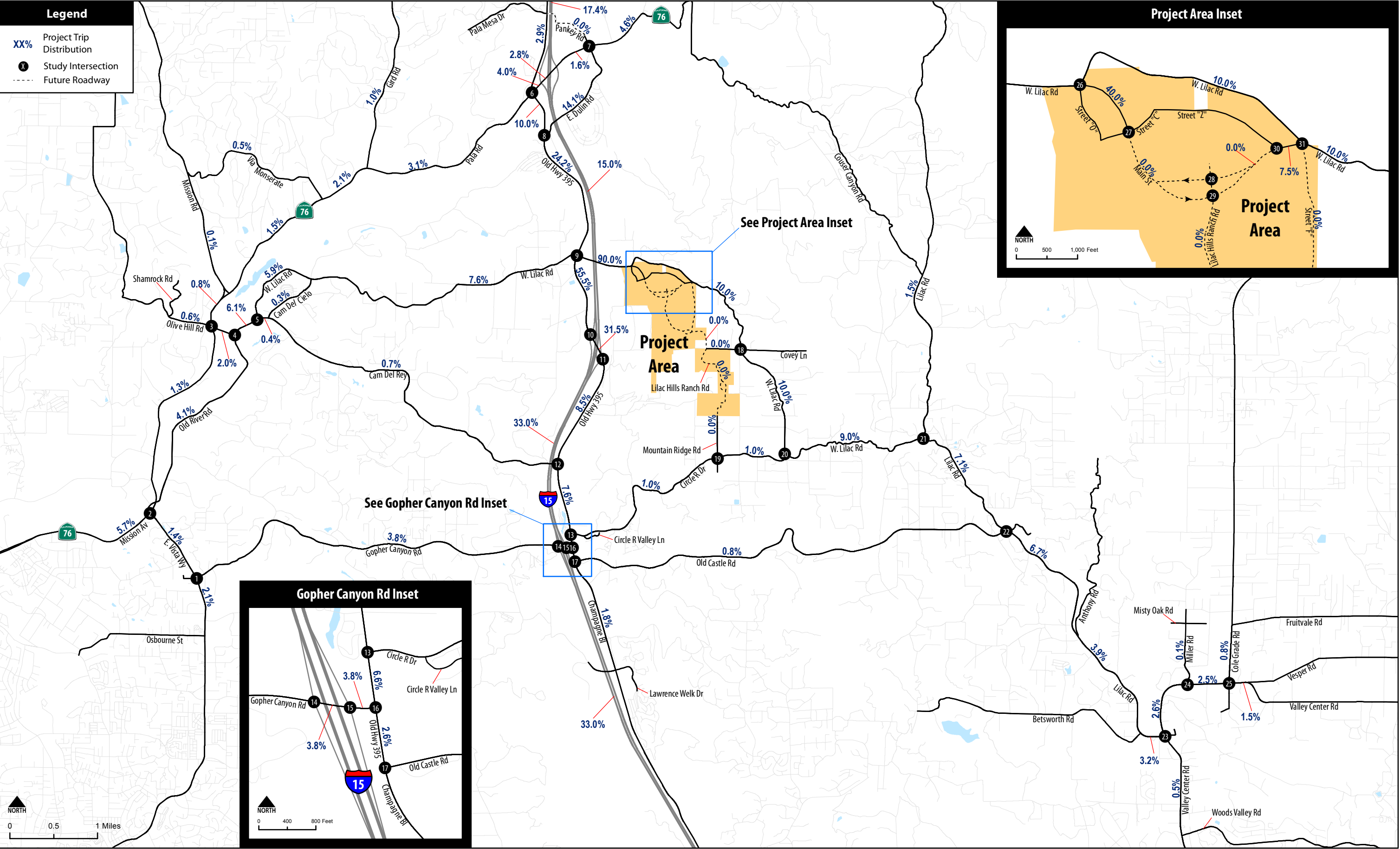
Figures 4-3 through **4-7** display the project trip distribution patterns associated with the existing network for the various traffic analysis phases, respectively. **Figures 4-8** and **4-9** display the project trip distribution patterns associated with the Horizon Year mobility element network with and without Road 3, respectively.

4.2.4 Project Trip Assignment

Based upon the project trip distributions, the external daily and AM/PM peak hour project trips were assigned to the various roadway networks. Seven (7) separate sets of trip assignments were developed including the following:

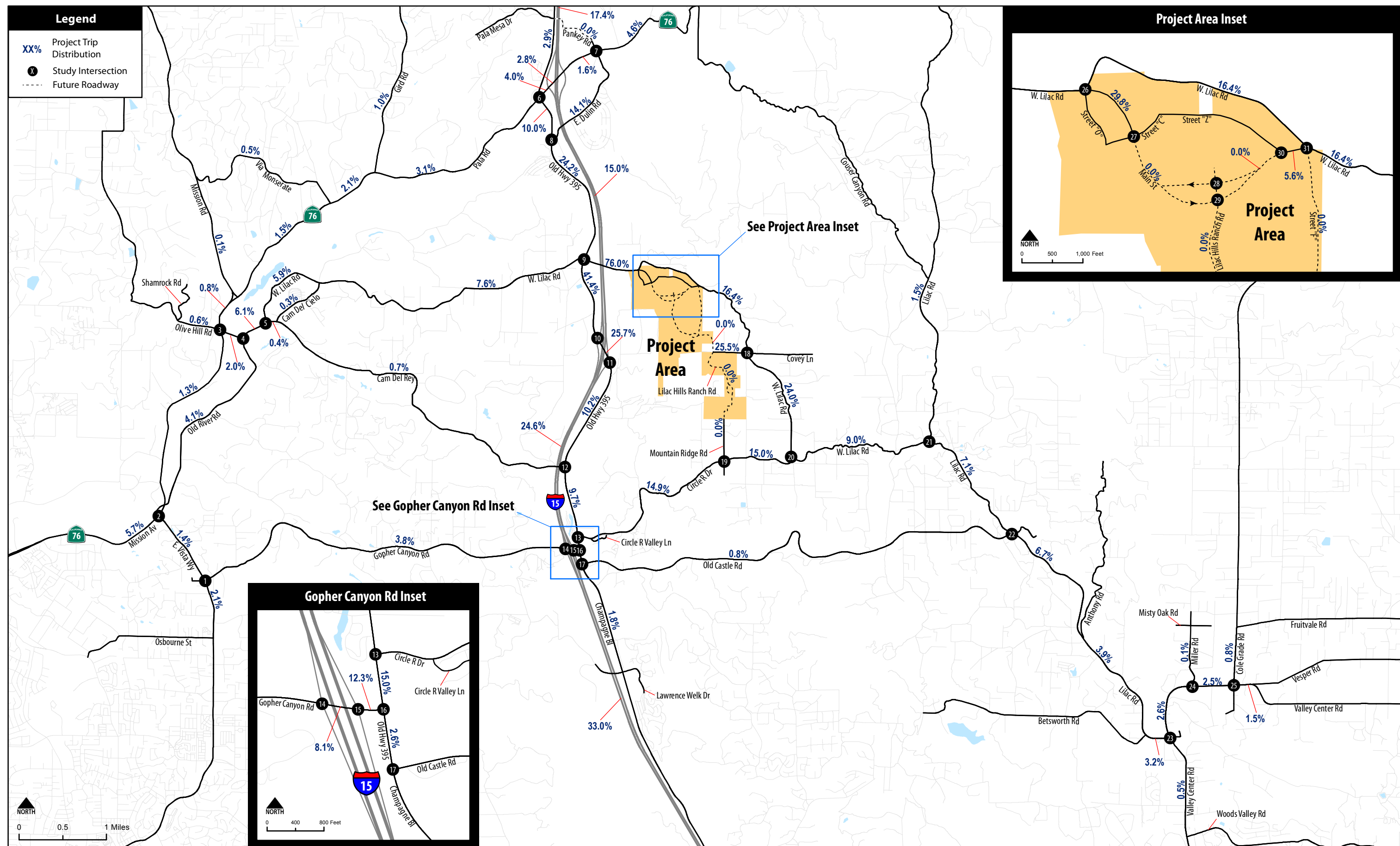
- Project Phase A land uses on the existing network
- Project Phase B land uses on the existing network
- Project Phase C land uses on the existing network
- Project Phase D land uses on the existing network
- Project Buildout land uses on the existing network
- Project Buildout land uses on the Horizon Year mobility element network with Road 3
- Project Buildout land uses on the Horizon Year mobility element network without Road 3

Figures 4-10A through **4-14B** display the assignment of project trips to the Existing roadway networks and key study area intersections under the various traffic analysis phases. Similarly, **Figures 4-15A** and **4-16A** display the assignment of project trips to the respective Horizon Year (with and without Road 3) roadway networks.



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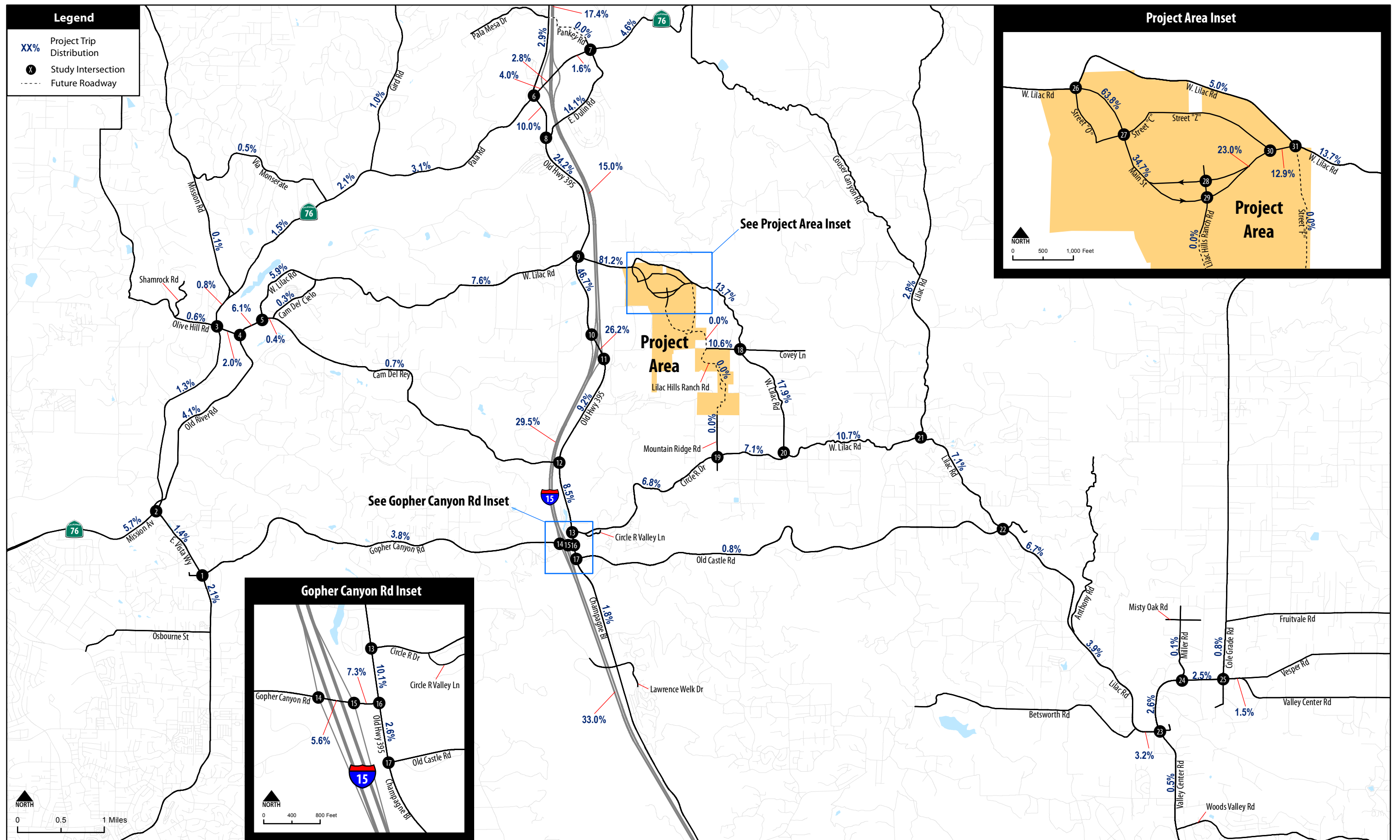
Figure 4-3
Project Trip Distribution (Phase A) - Existing Network



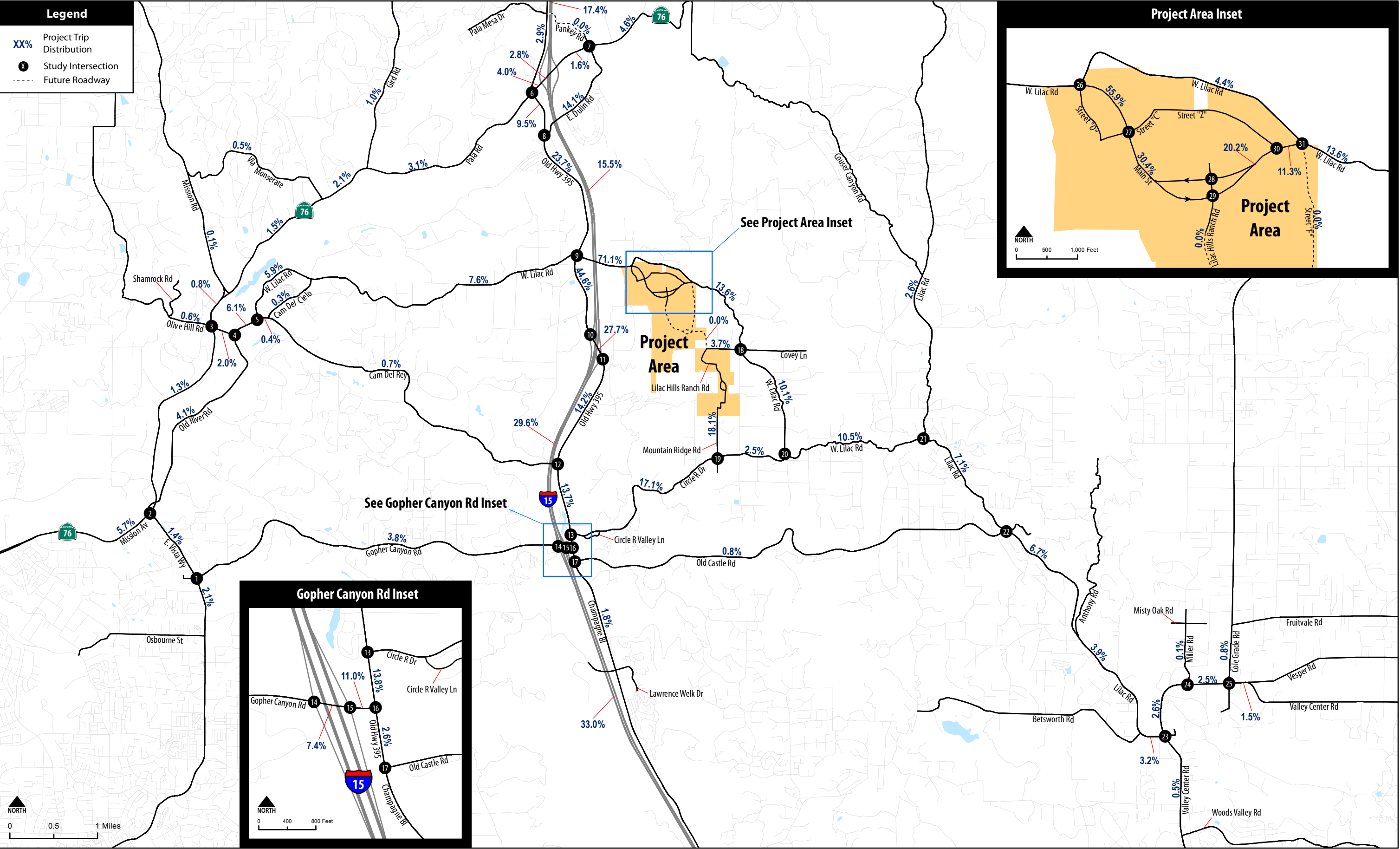
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Figure 4-4

Project Trip Distribution (Phase B) - Existing Network

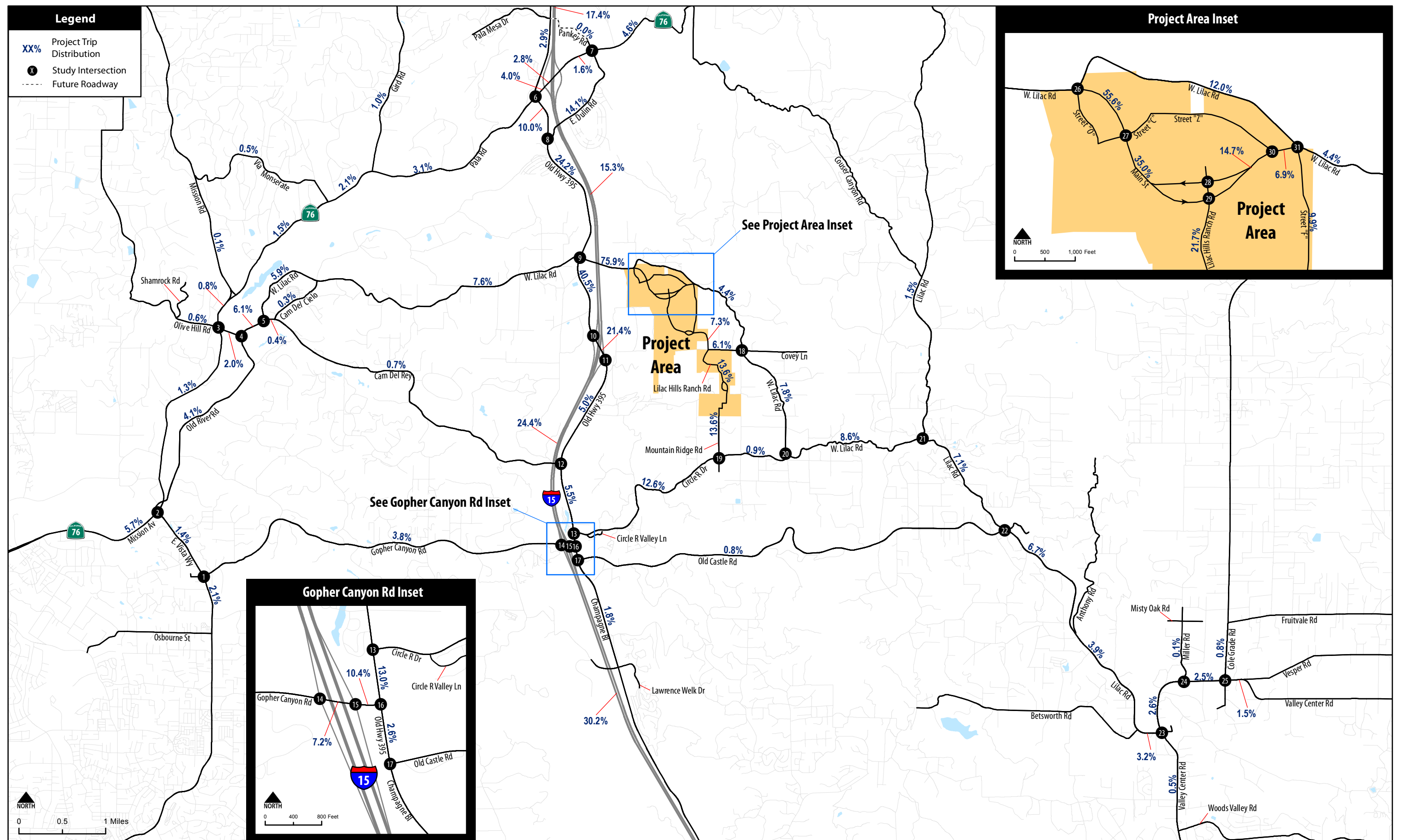


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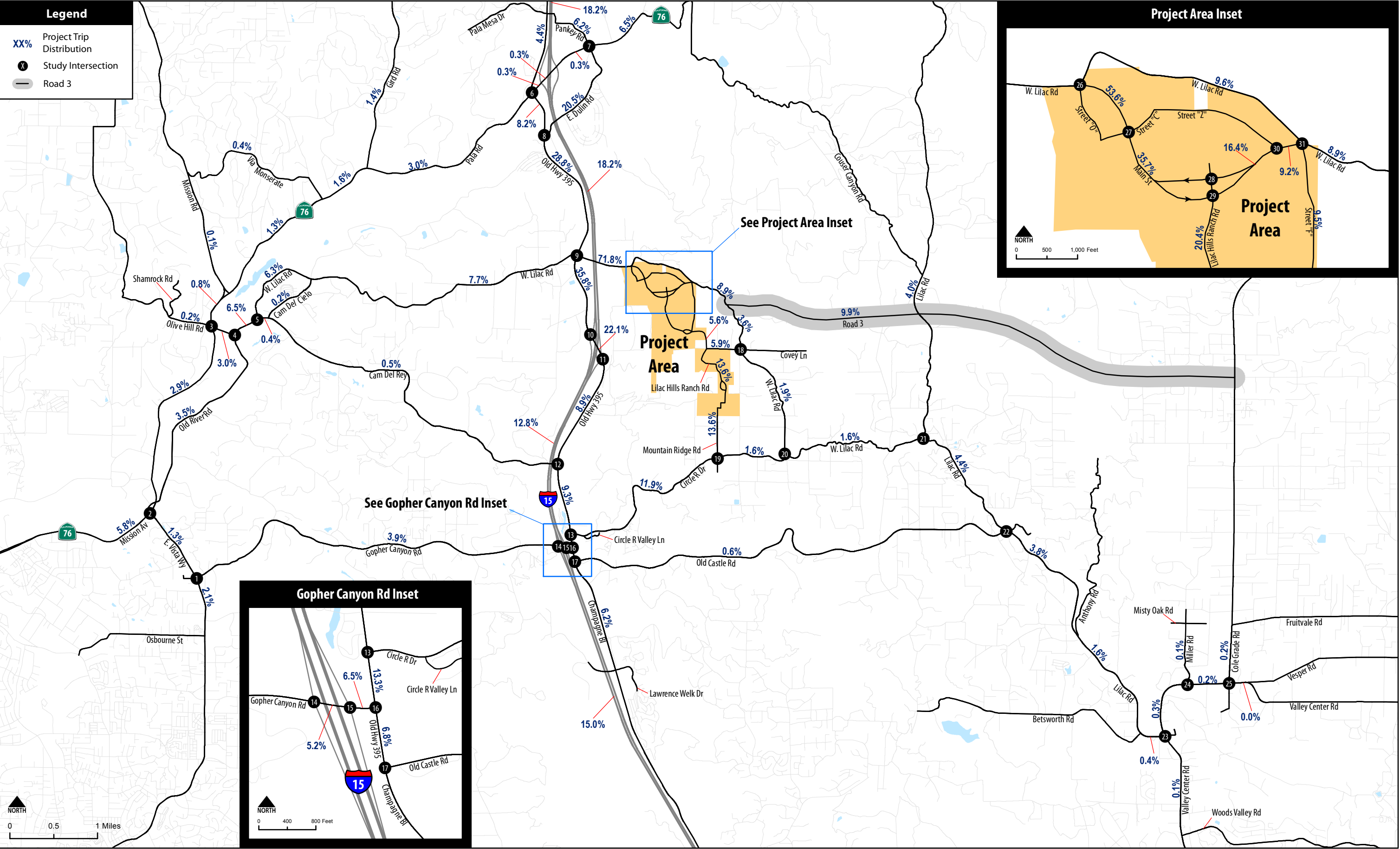
Figure 4-6
Project Trip Distribution (Phase D) - Existing Network



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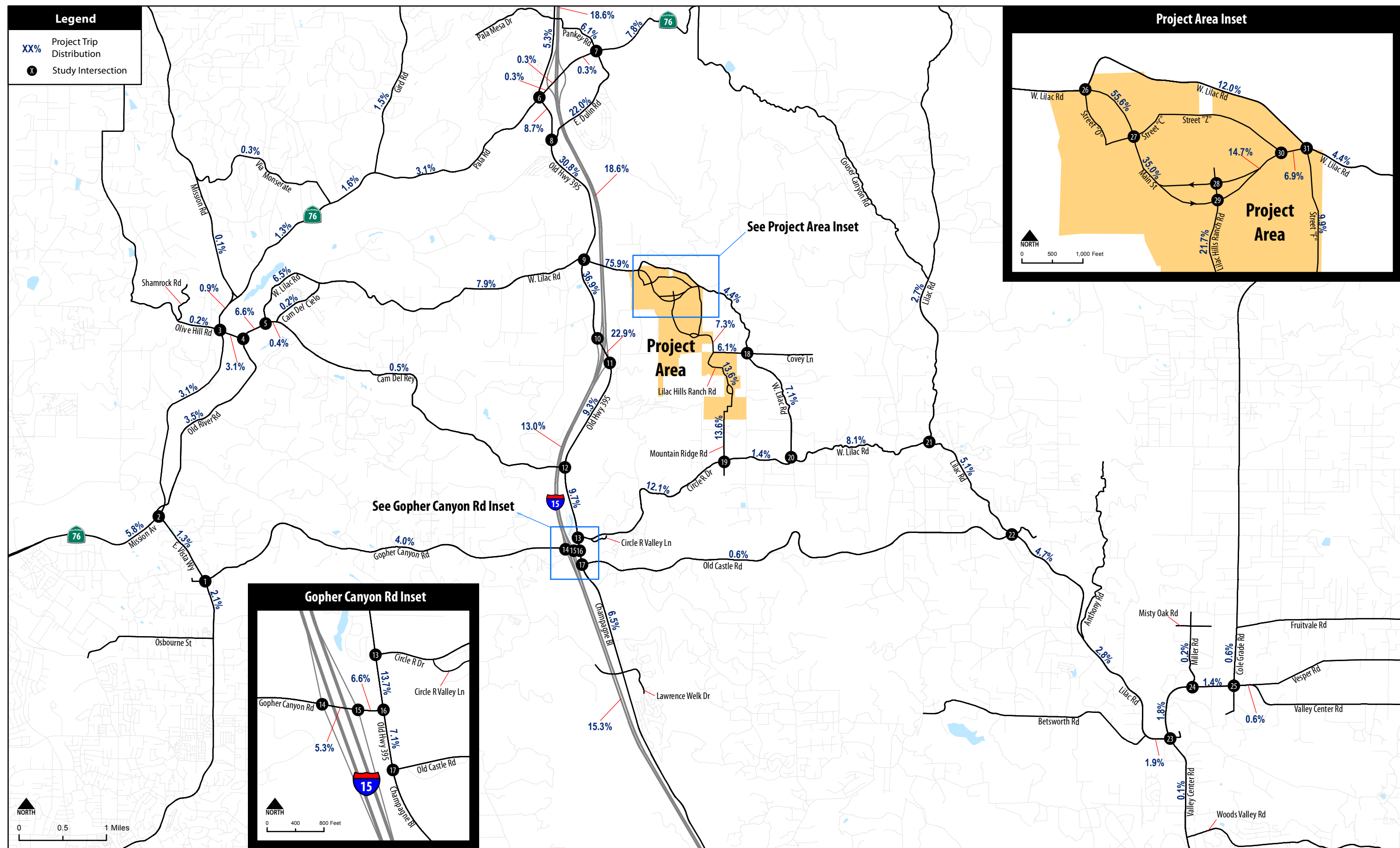
Figure 4-7

Project Trip Distribution (Phase E, Buildout) - Existing Network



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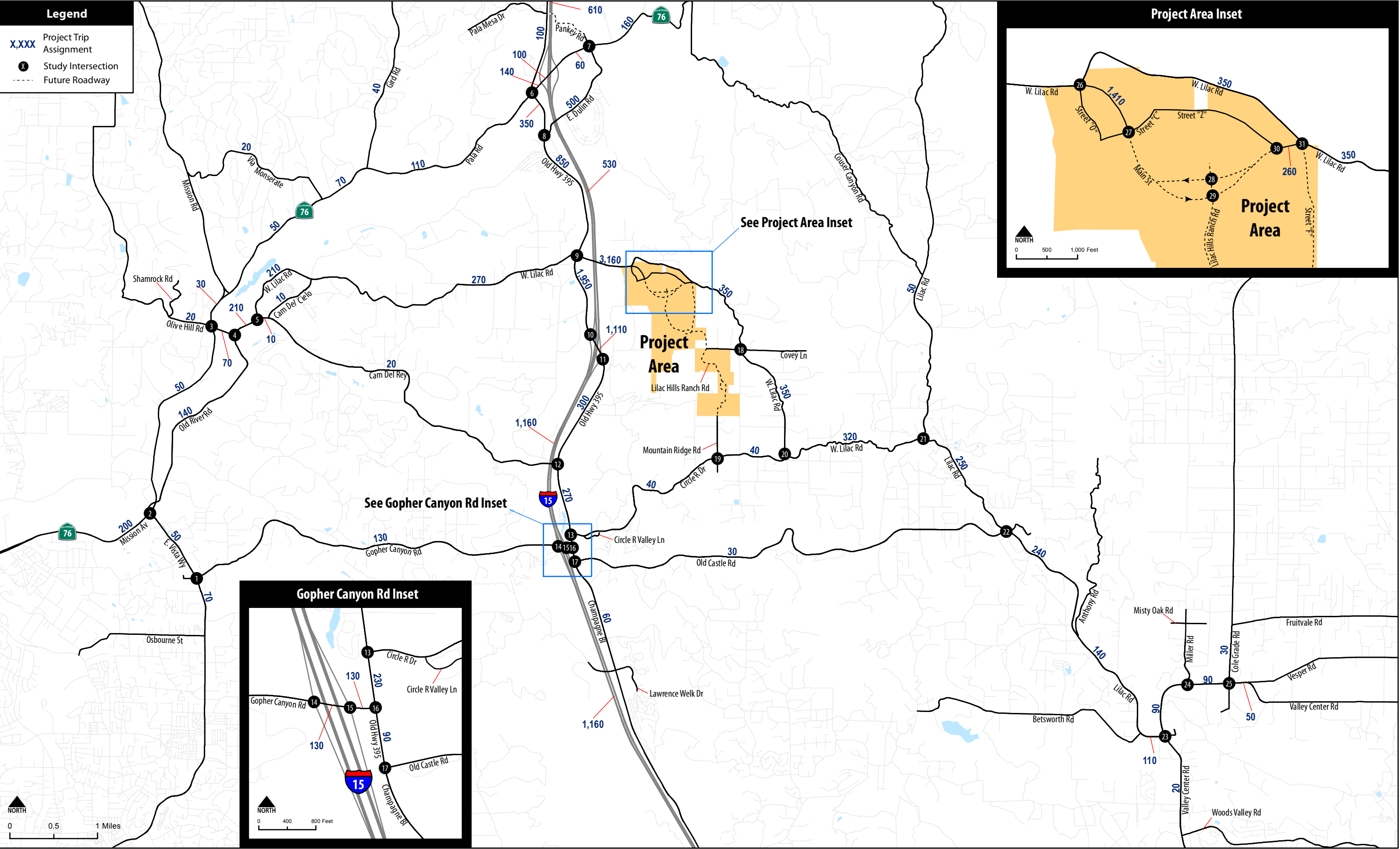
Figure 4-8
Project Trip Distribution (Buildout) - Horizon Year Network with Road 3



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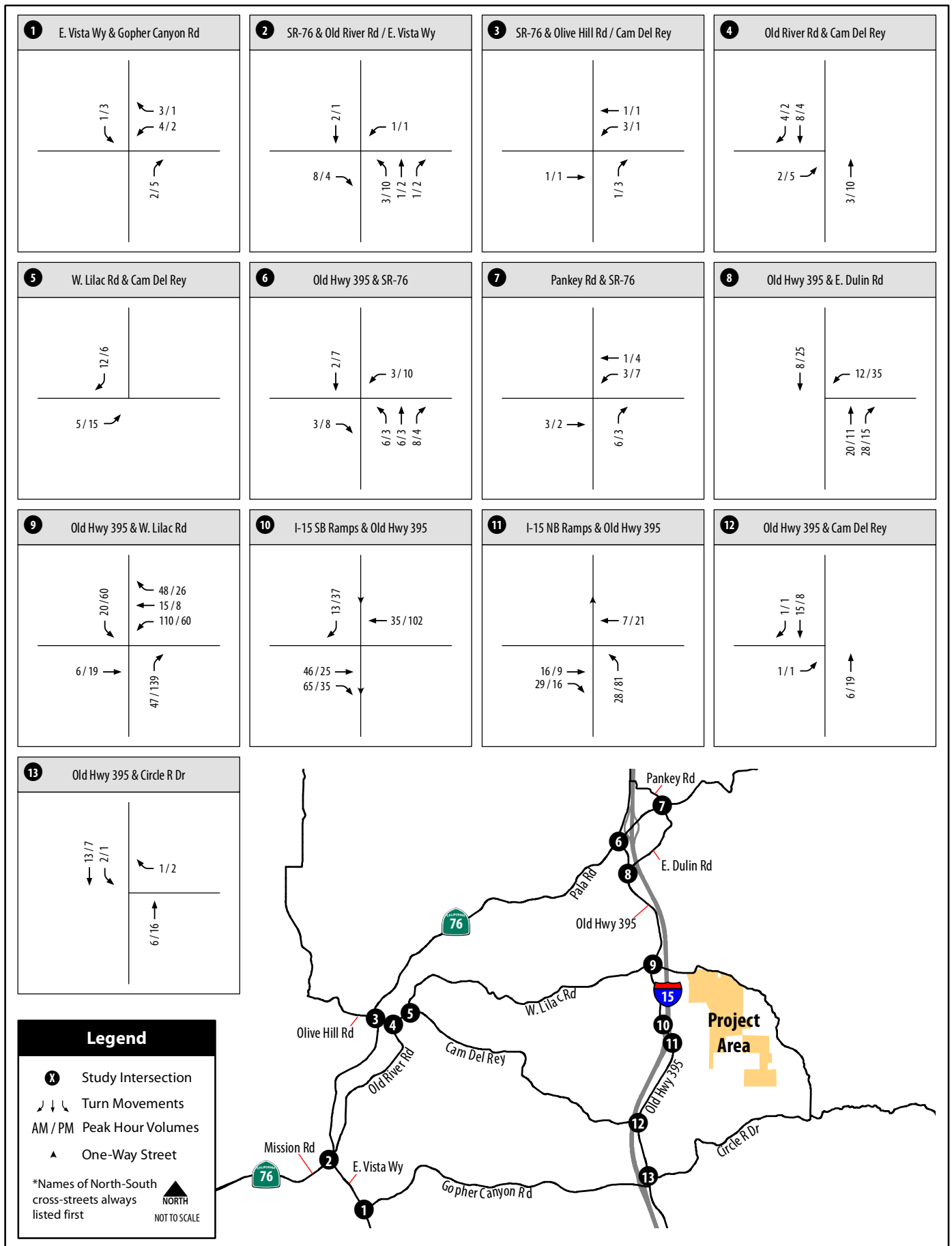
Figure 4-9

Project Trip Distribution (Buildout) - Horizon Year Network without Road 3



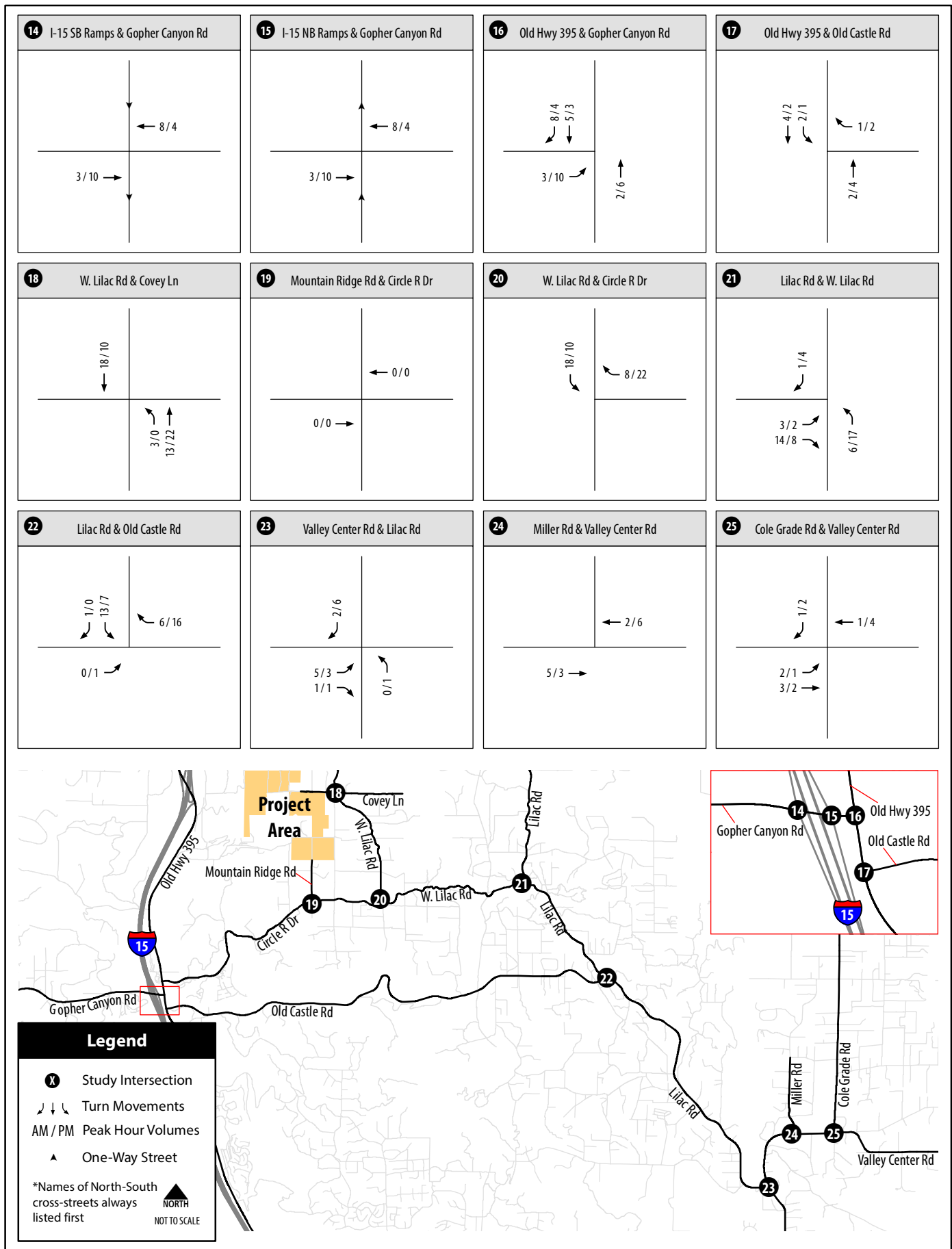
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Figure 4-10A
Project (Phase A) Trip Assignment (Roadway) - Existing Network



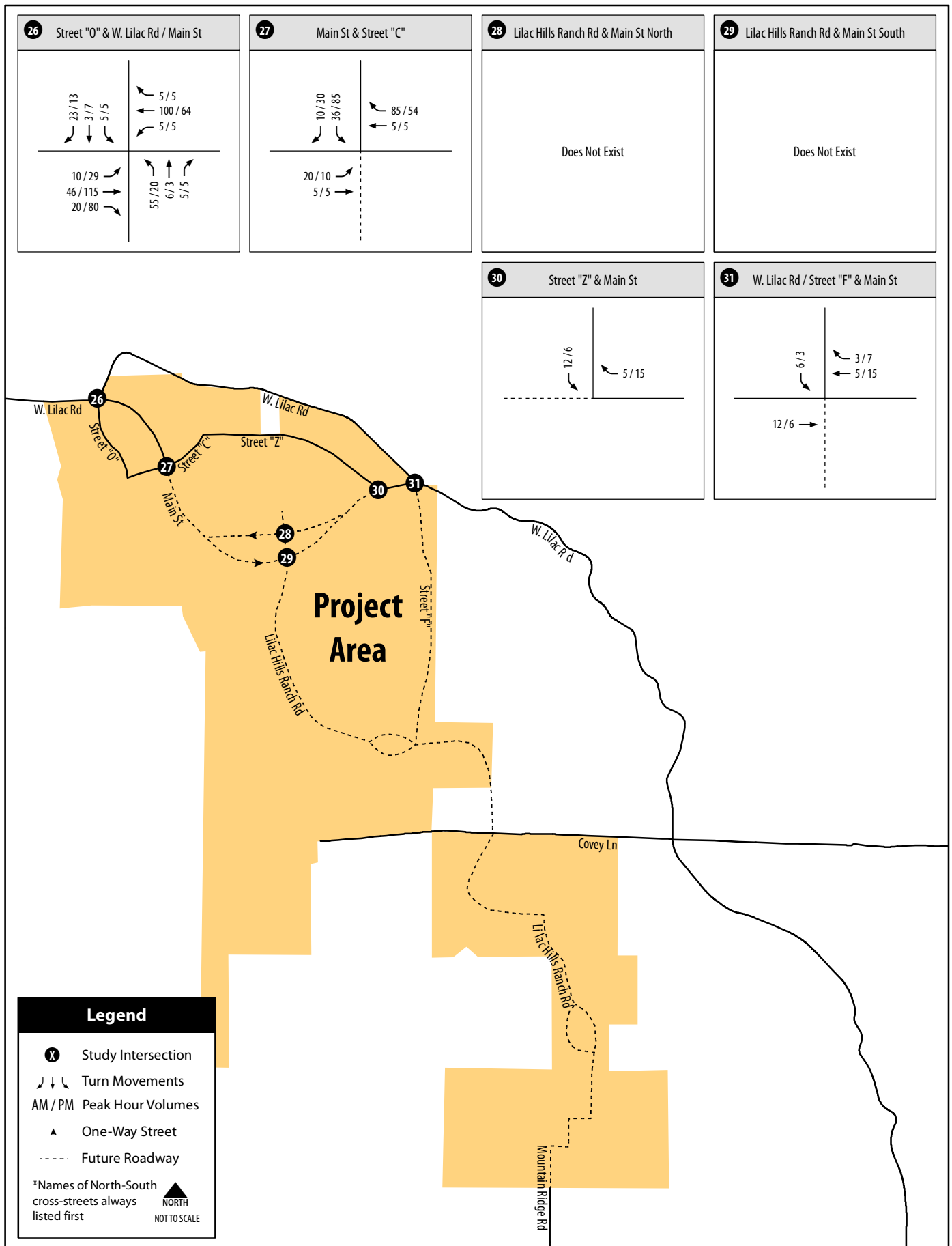
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Figure 4-10B (Intersections 1-13)
Project (Phase A) Trip Assignment (Intersection) -
Existing Network



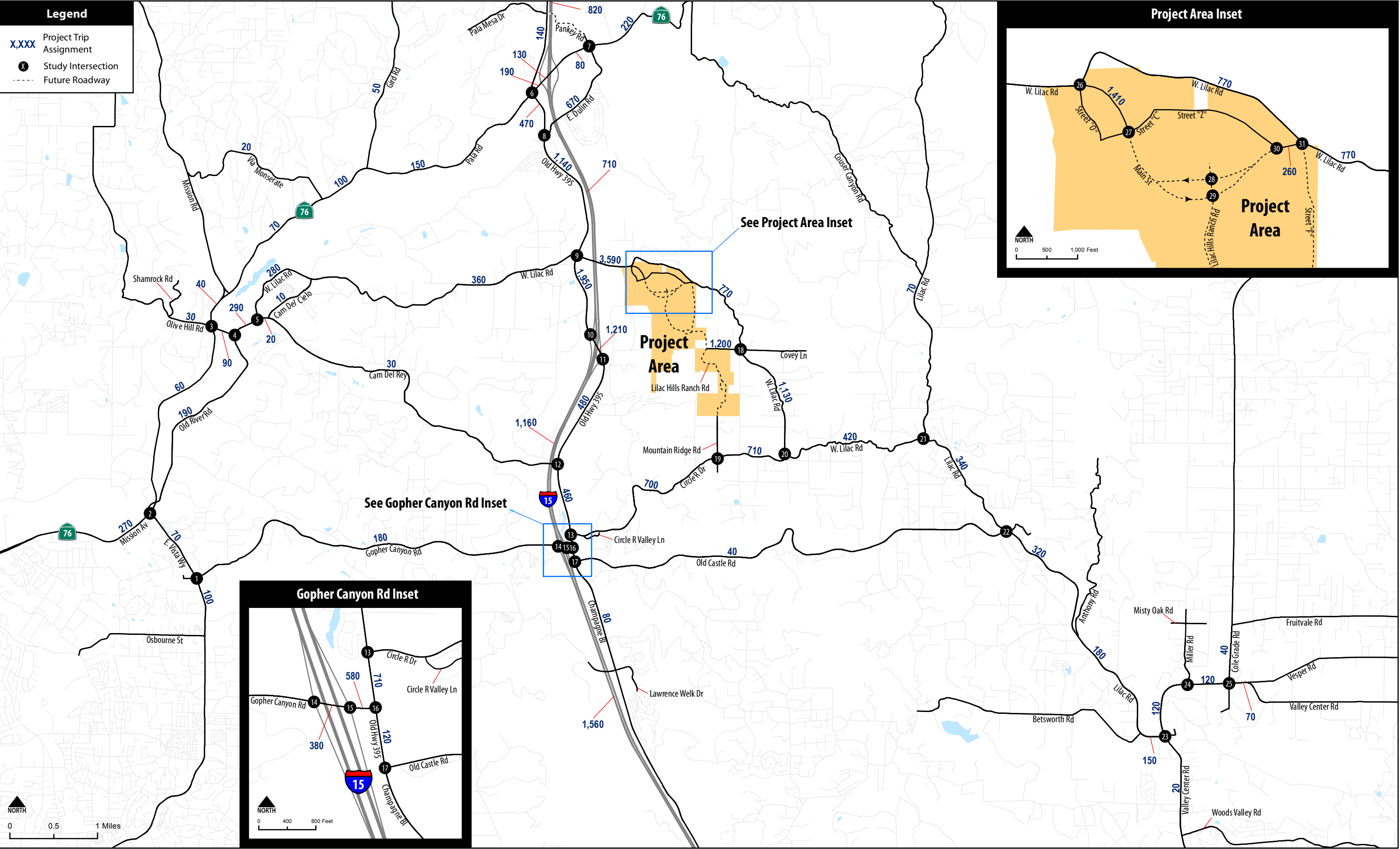
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Figure 4-10B (Intersections 14-25)
Project (Phase A) Trip Assignment (Intersection) -
Existing Network



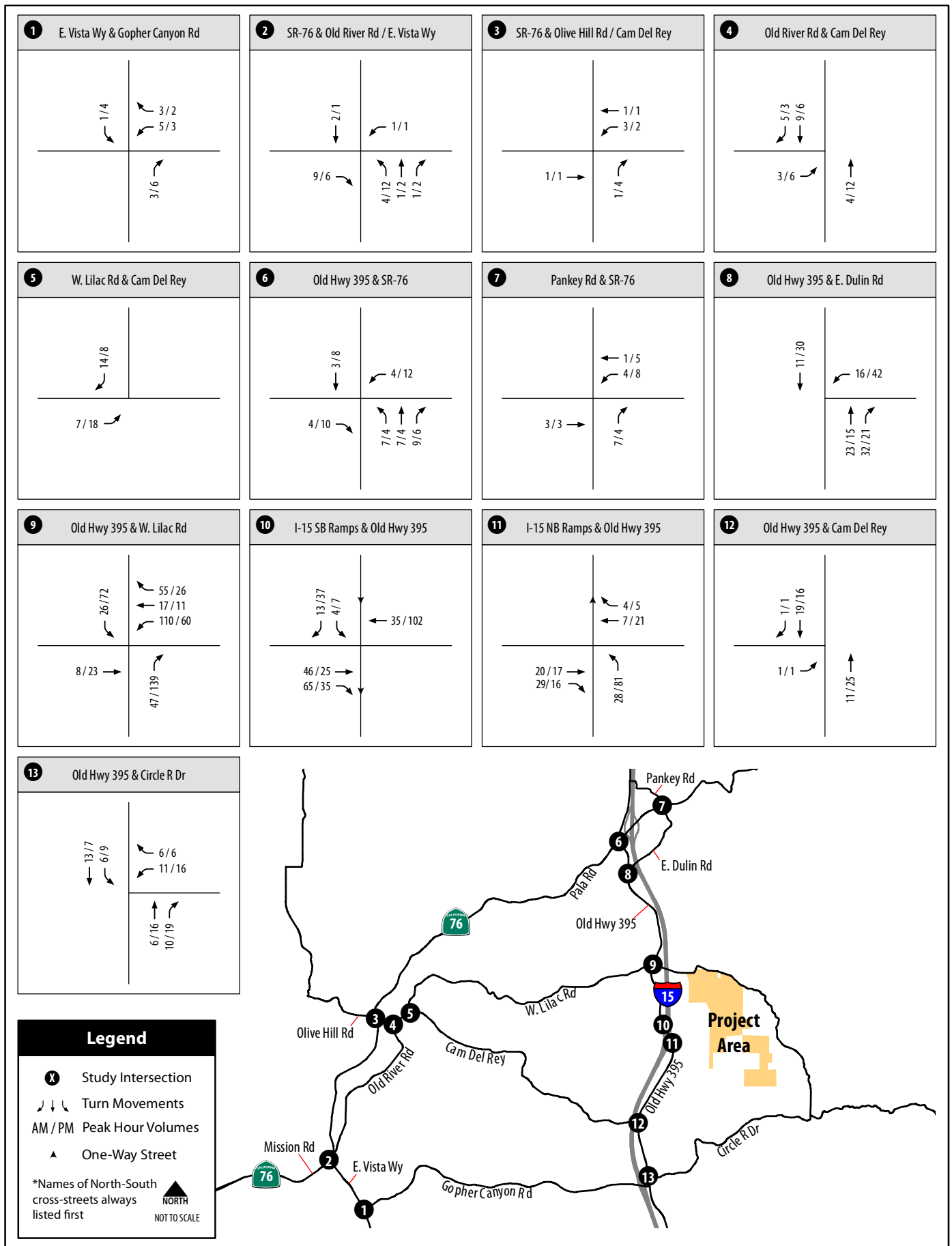
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Figure 4-10B (Intersections 26-31)
Project (Phase A) Trip Assignment (Intersection) -
Existing Network



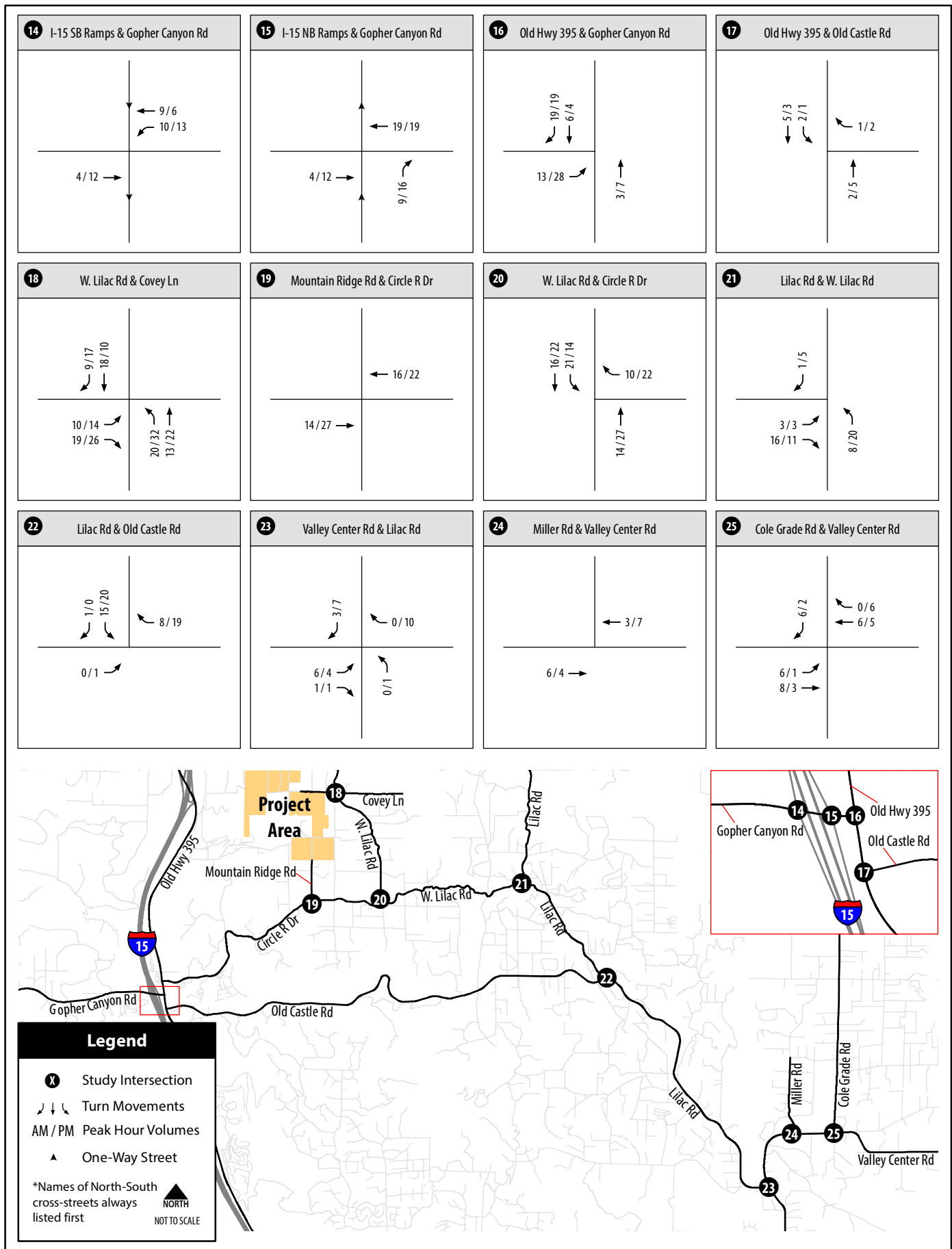
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Figure 4-11A
Project (Phase B) Trip Assignment (Roadway) - Existing Network



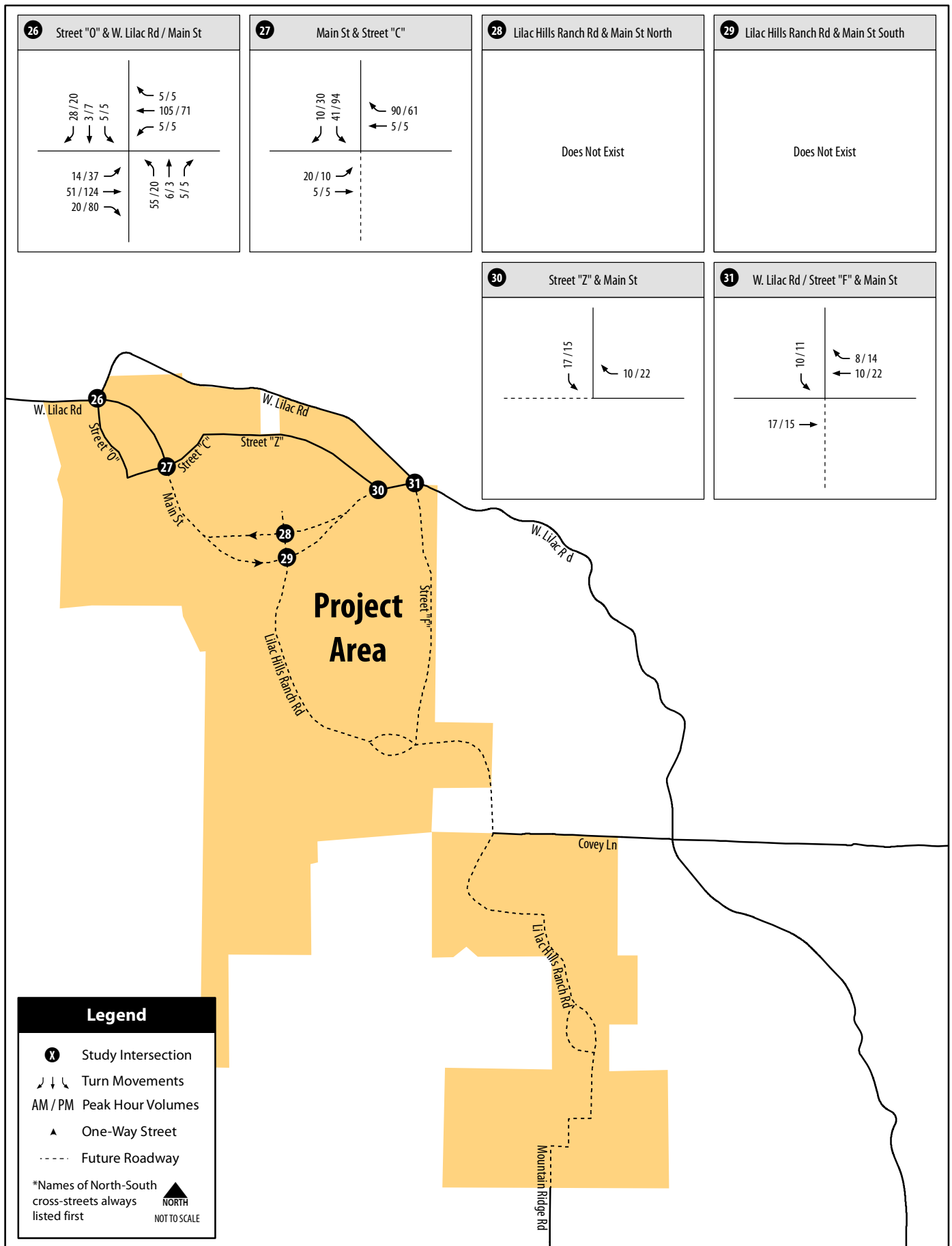
Lilac Hills Ranch Traffic Impact Study

Figure 4-11B (Intersections 1-13)
Project (Phase B) Trip Assignment (Intersection) -
Existing Network



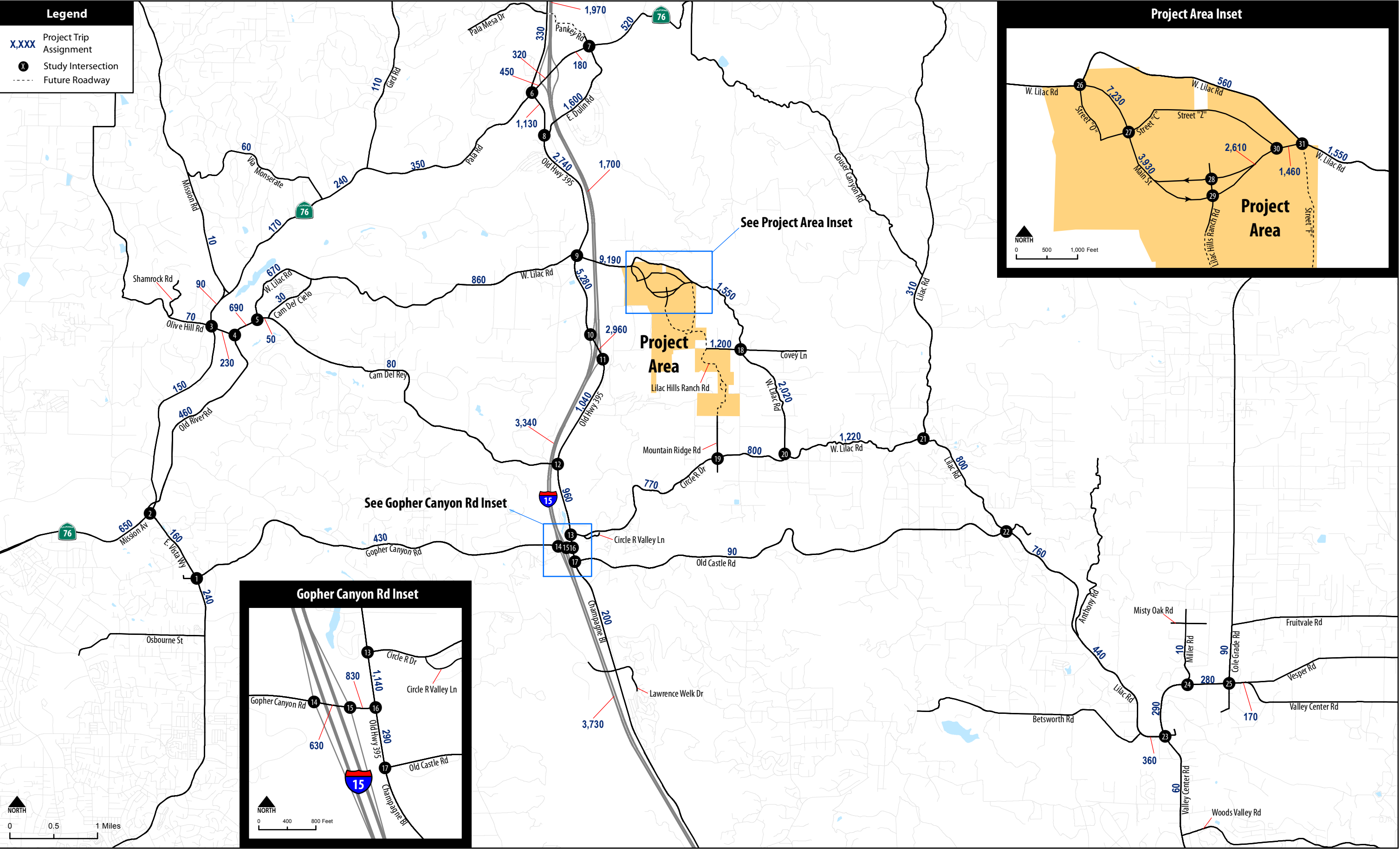
Lilac Hills Ranch Traffic Impact Study

Figure 4-11B (Intersections 14-25)
Project (Phase B) Trip Assignment (Intersection) -
Existing Network



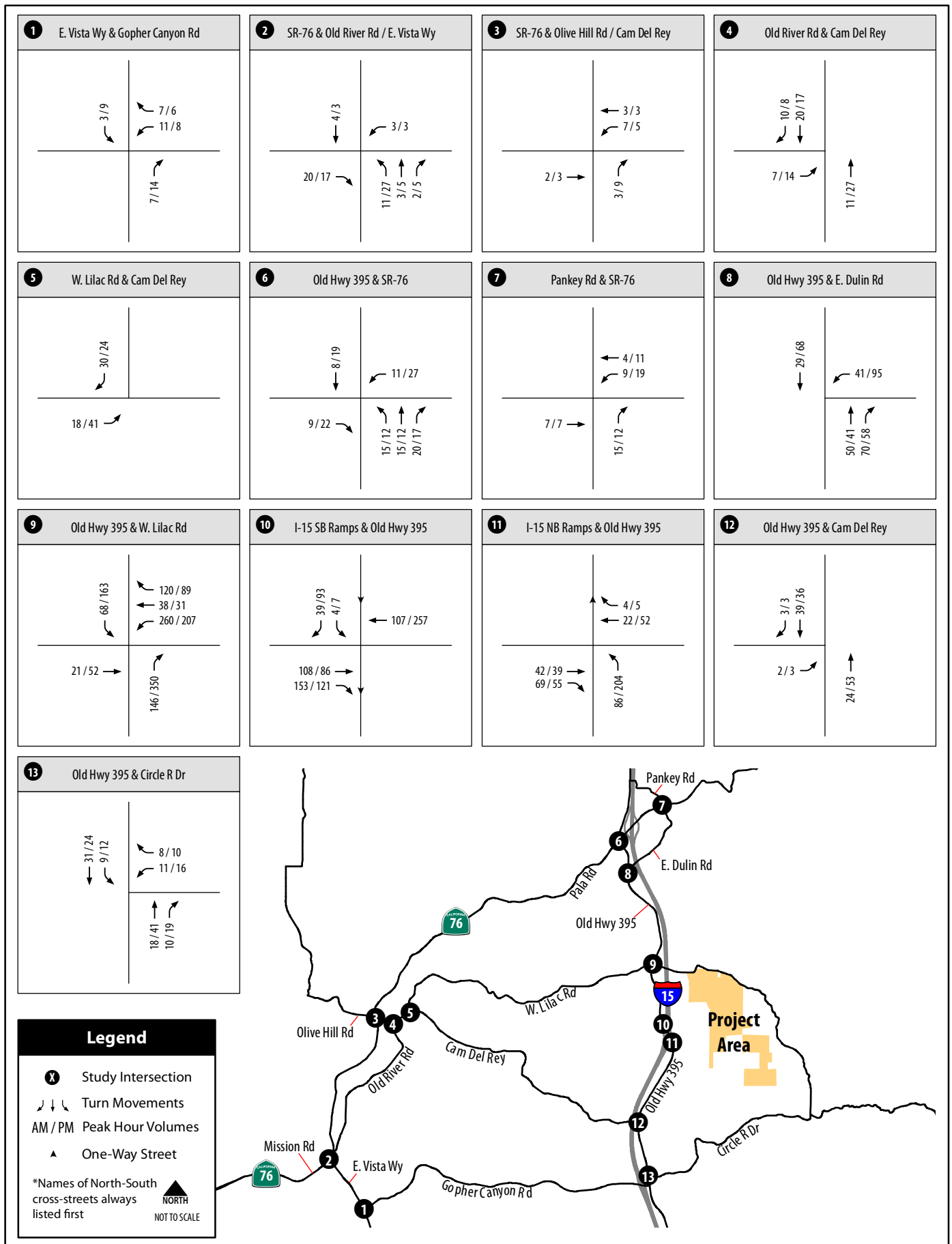
Lilac Hills Ranch Traffic Impact Study

Figure 4-11B (Intersections 26-31)
Project (Phase B) Trip Assignment (Intersection) -
Existing Network



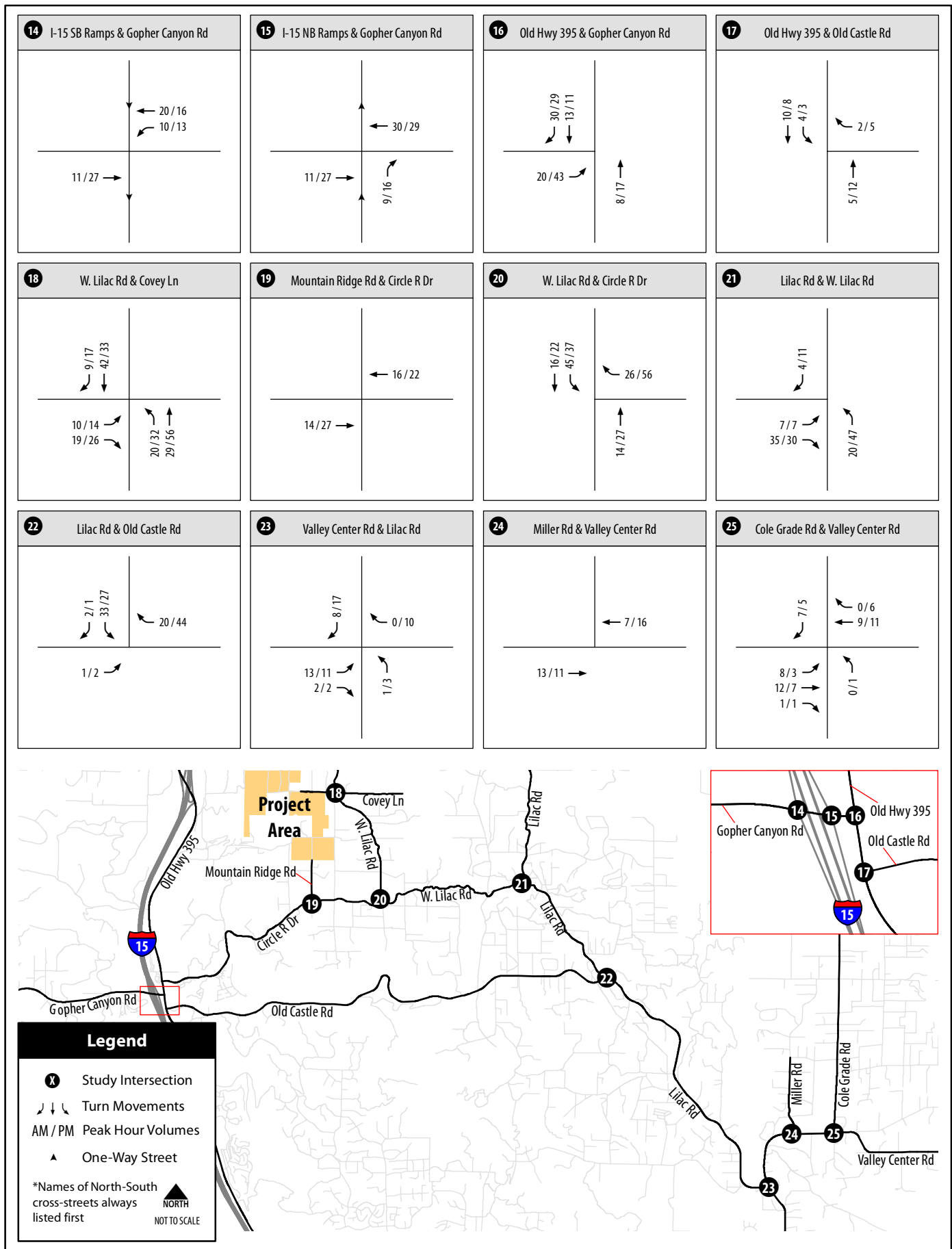
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Figure 4-12A
Project (Phase C) Trip Assignment (Roadway) - Existing Network



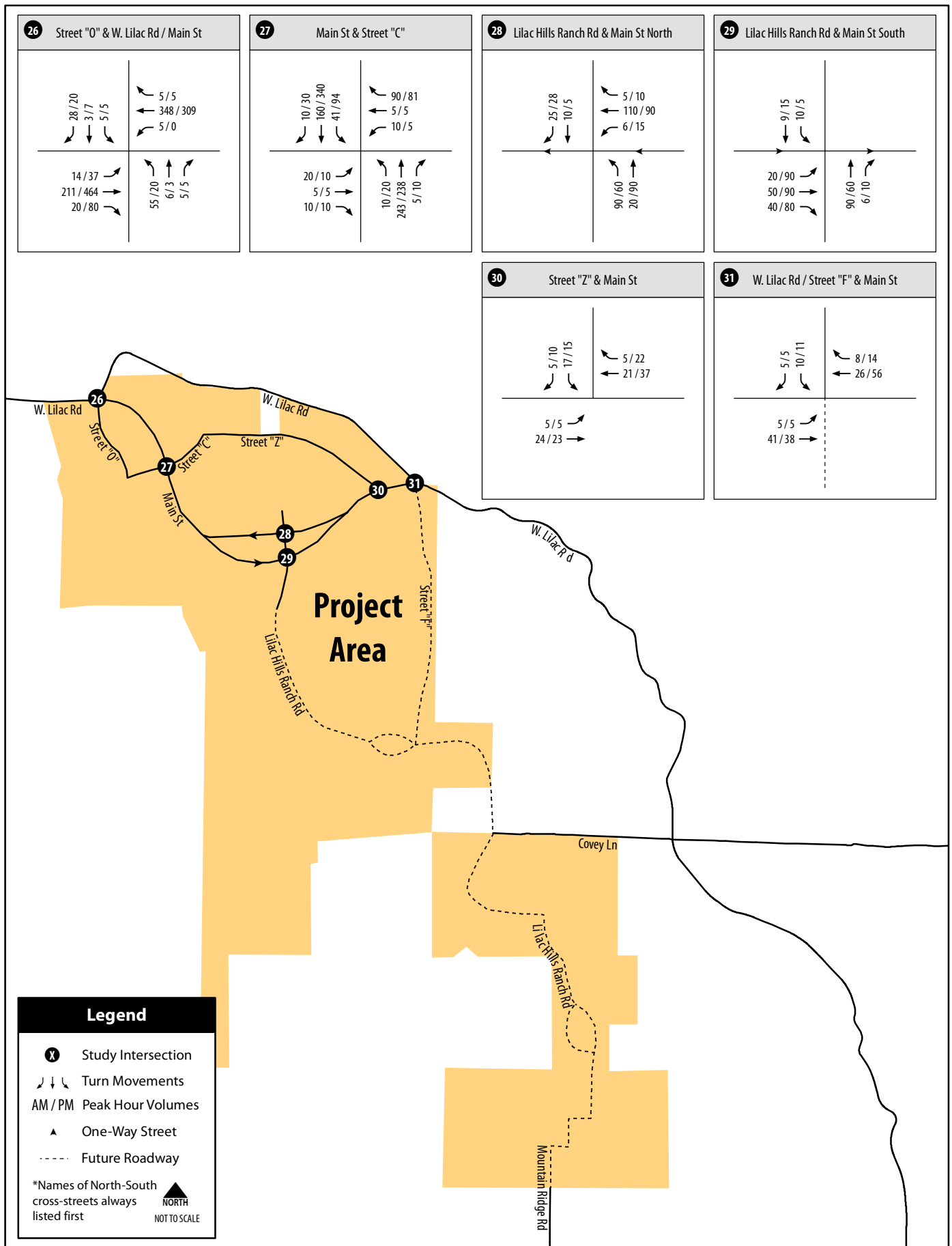
Lilac Hills Ranch Traffic Impact Study

Figure 4-12B (Intersections 1-13)
Project (Phase C) Trip Assignment (Intersection) -
Existing Network



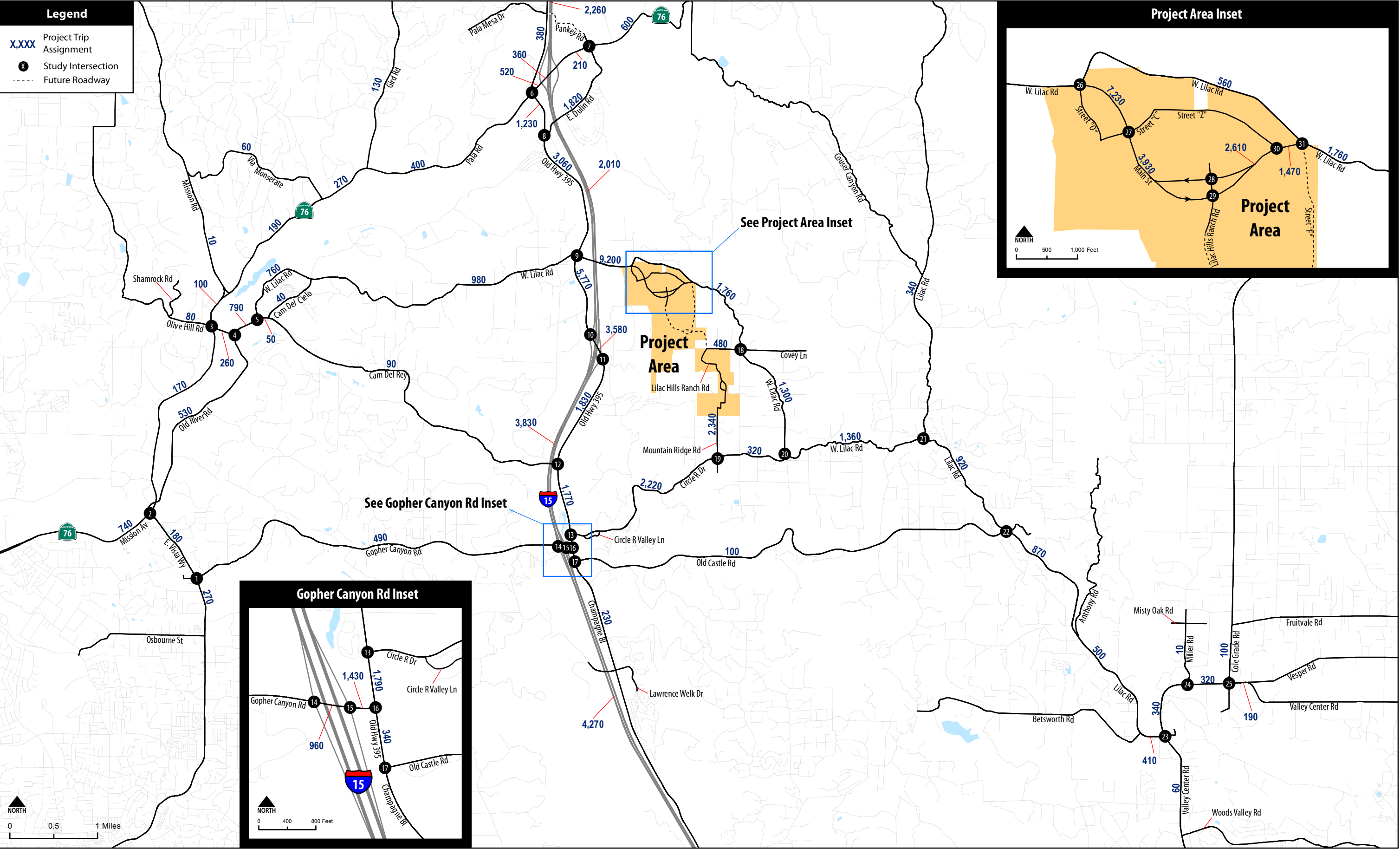
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Figure 4-12B (Intersections 14-25)
Project (Phase C) Trip Assignment (Intersection) -
Existing Network



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Figure 4-12B (Intersections 26-31)
Project (Phase C) Trip Assignment (Intersection) -
Existing Network

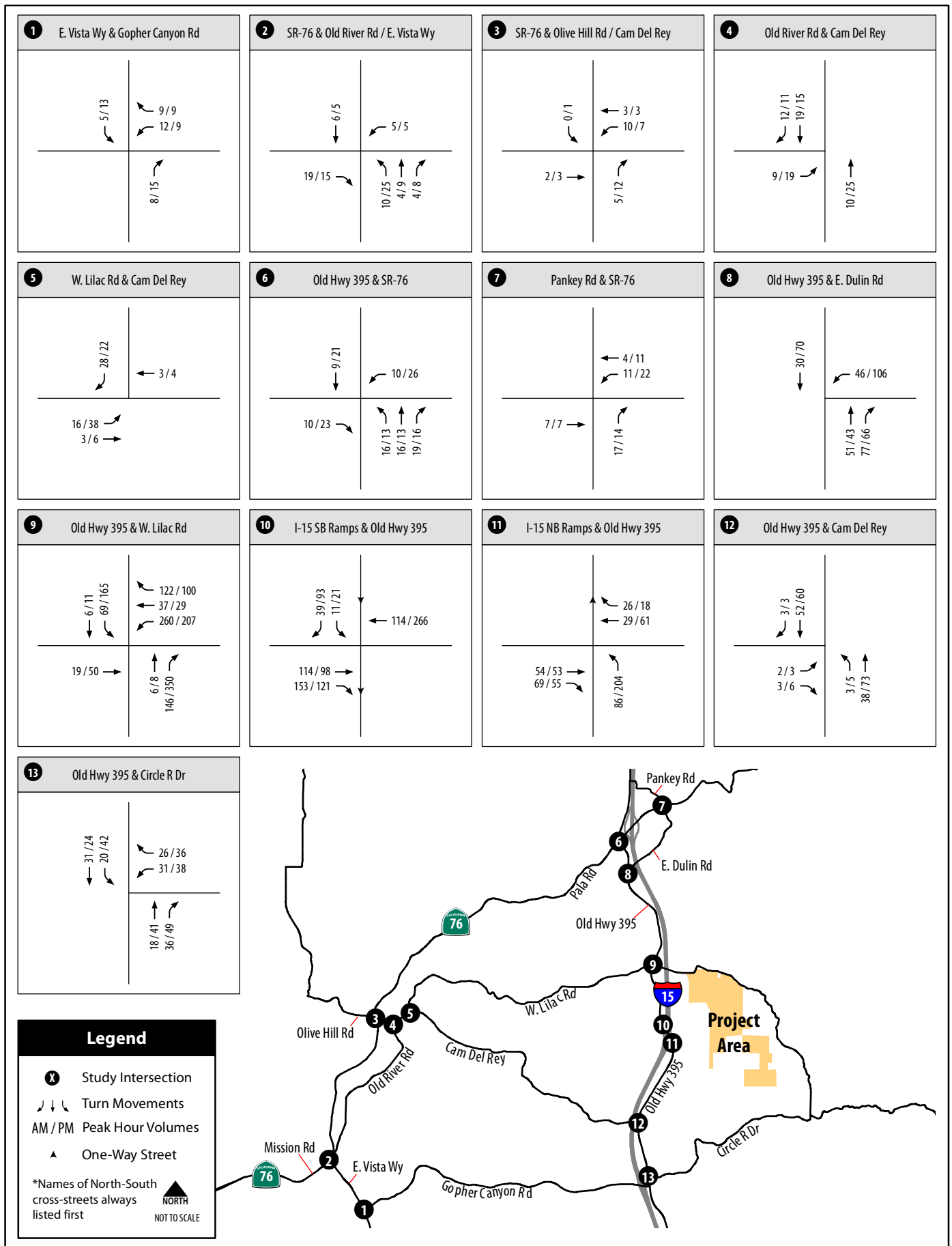


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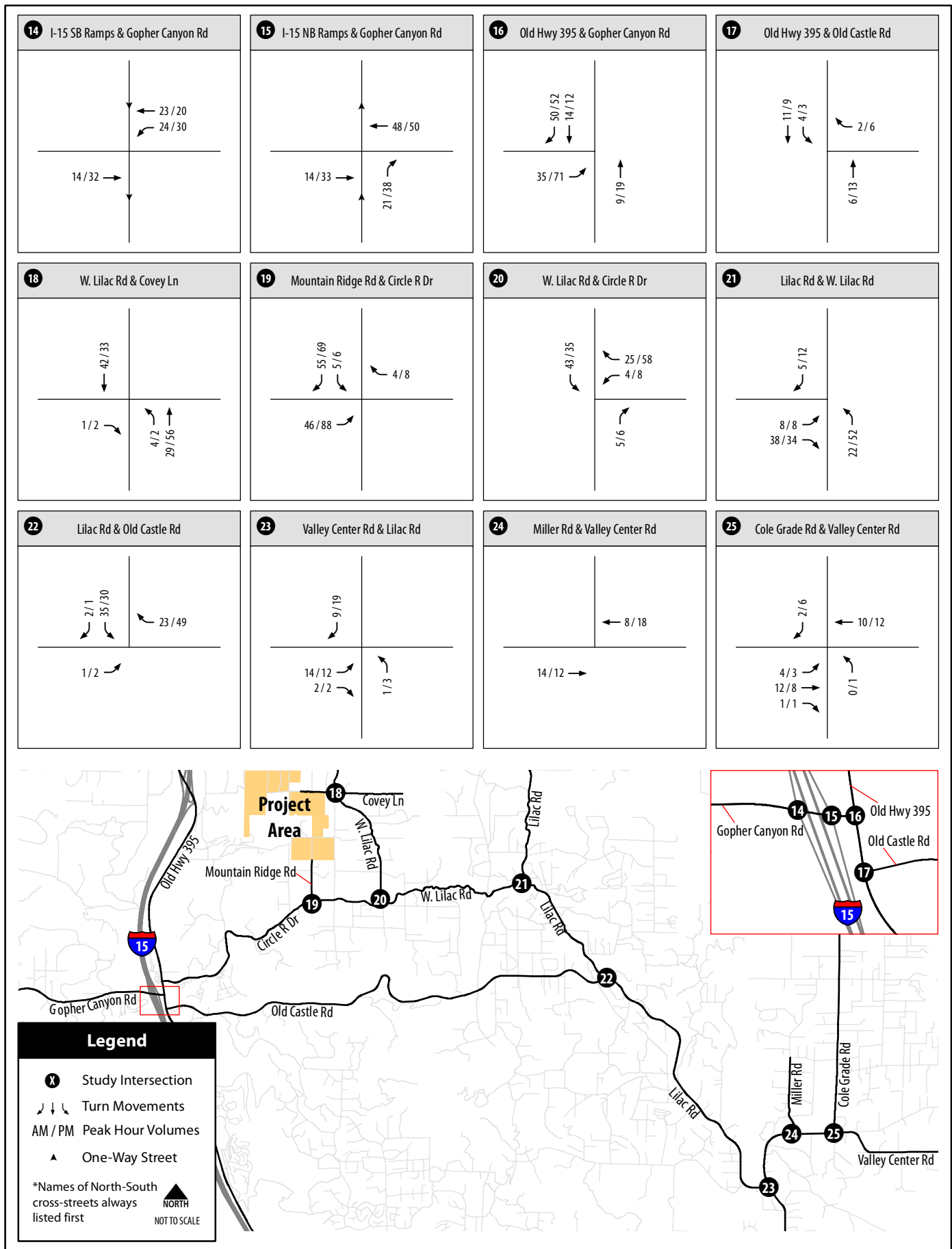
Figure 4-13A

Project (Phase D) Trip Assignment (Roadway) - Existing Network



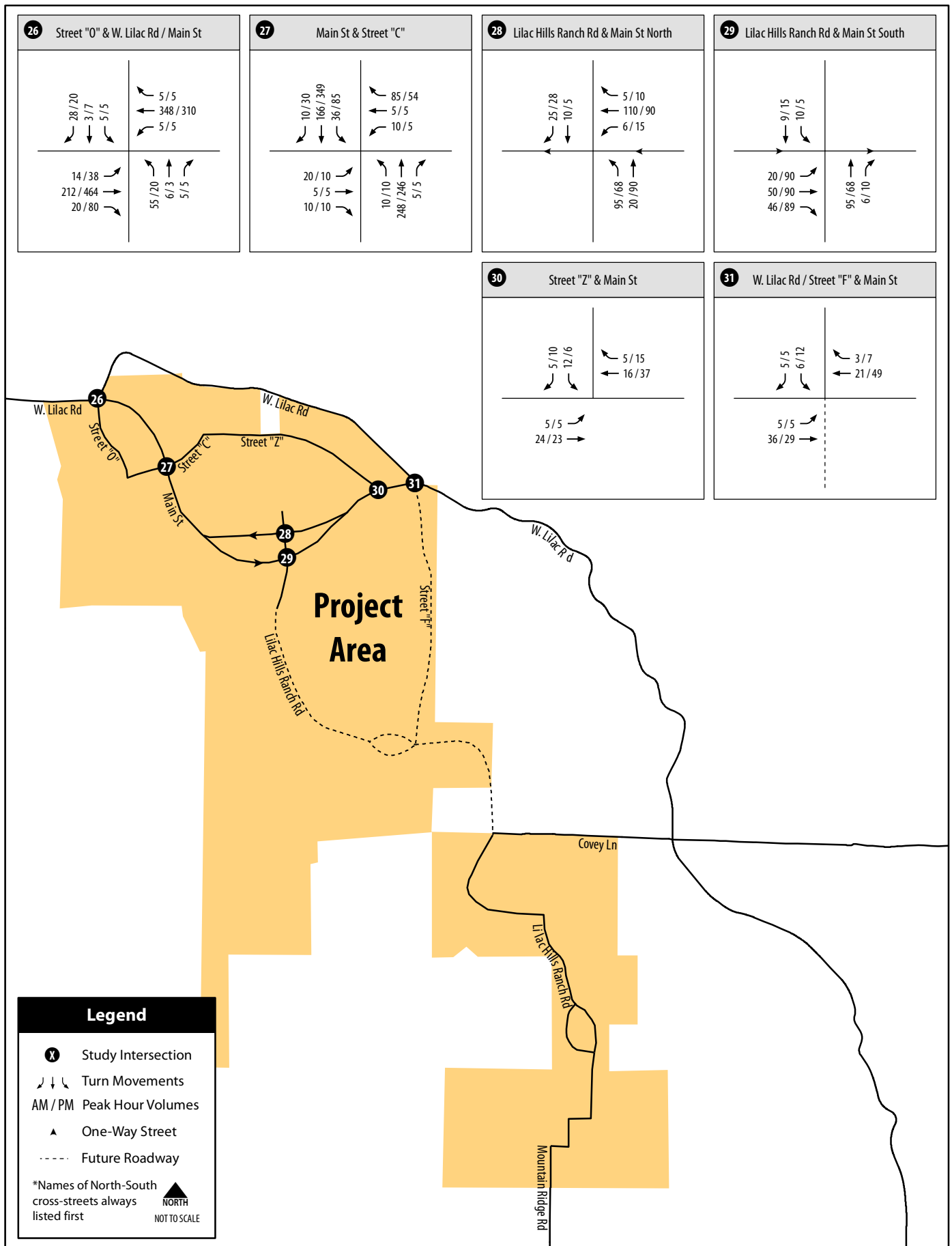
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Figure 4-13B (Intersections 1-13)
Project (Phase D) Trip Assignment (Intersection) -
Existing Network



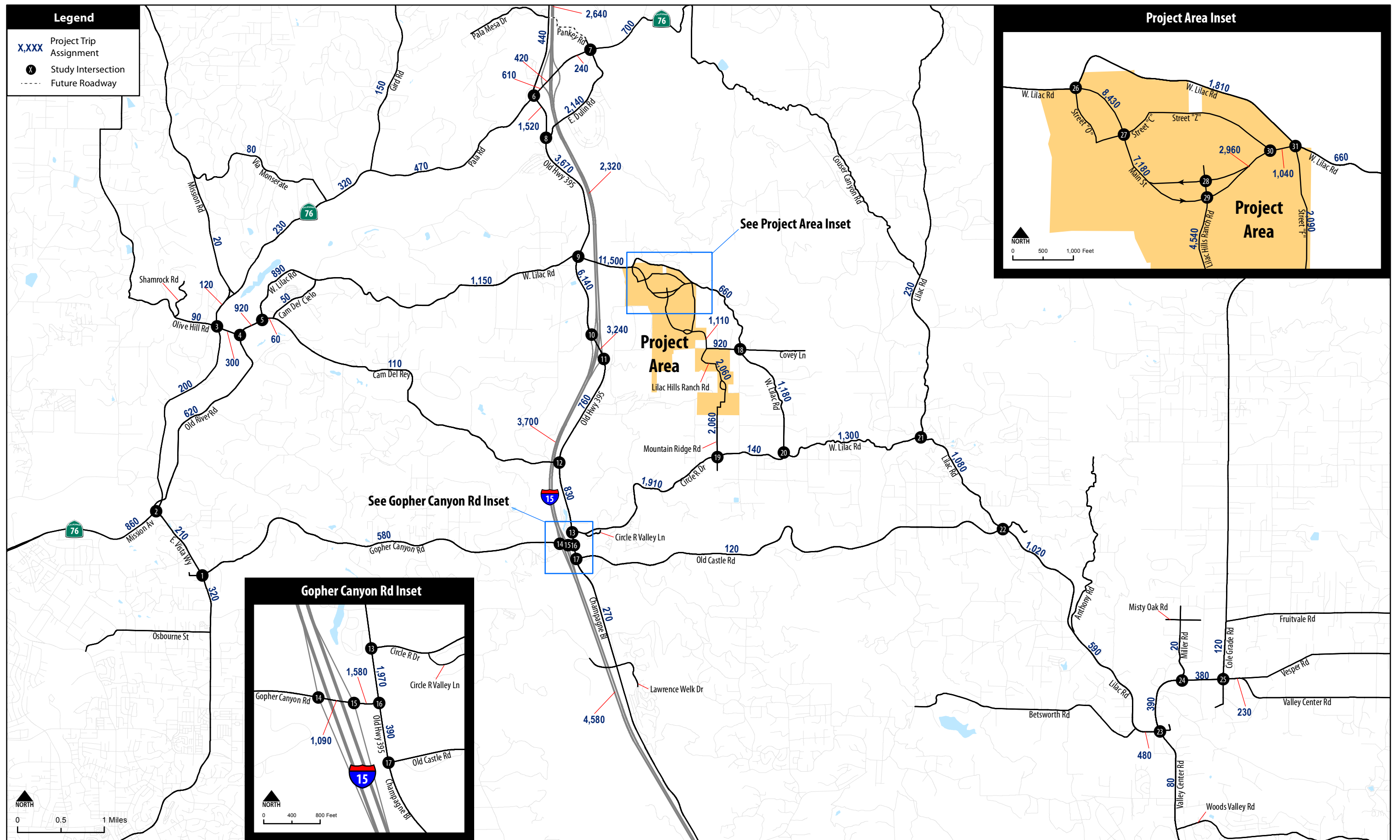
Lilac Hills Ranch Traffic Impact Study

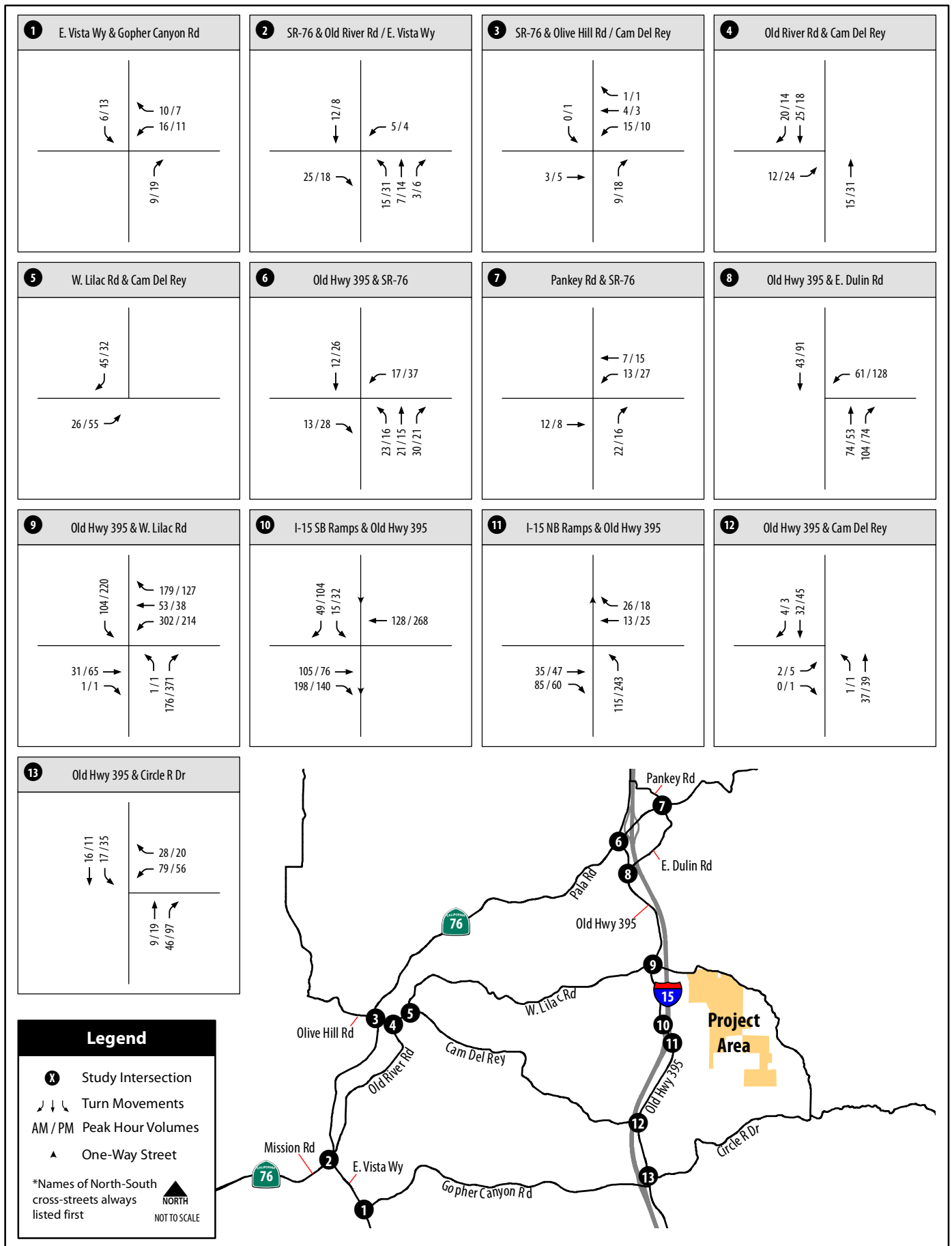
Figure 4-13B (Intersections 14-25)
Project (Phase D) Trip Assignment (Intersection) -
Existing Network



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Figure 4-13B (Intersections 26-31)
Project (Phase D) Trip Assignment (Intersection) -
Existing Network



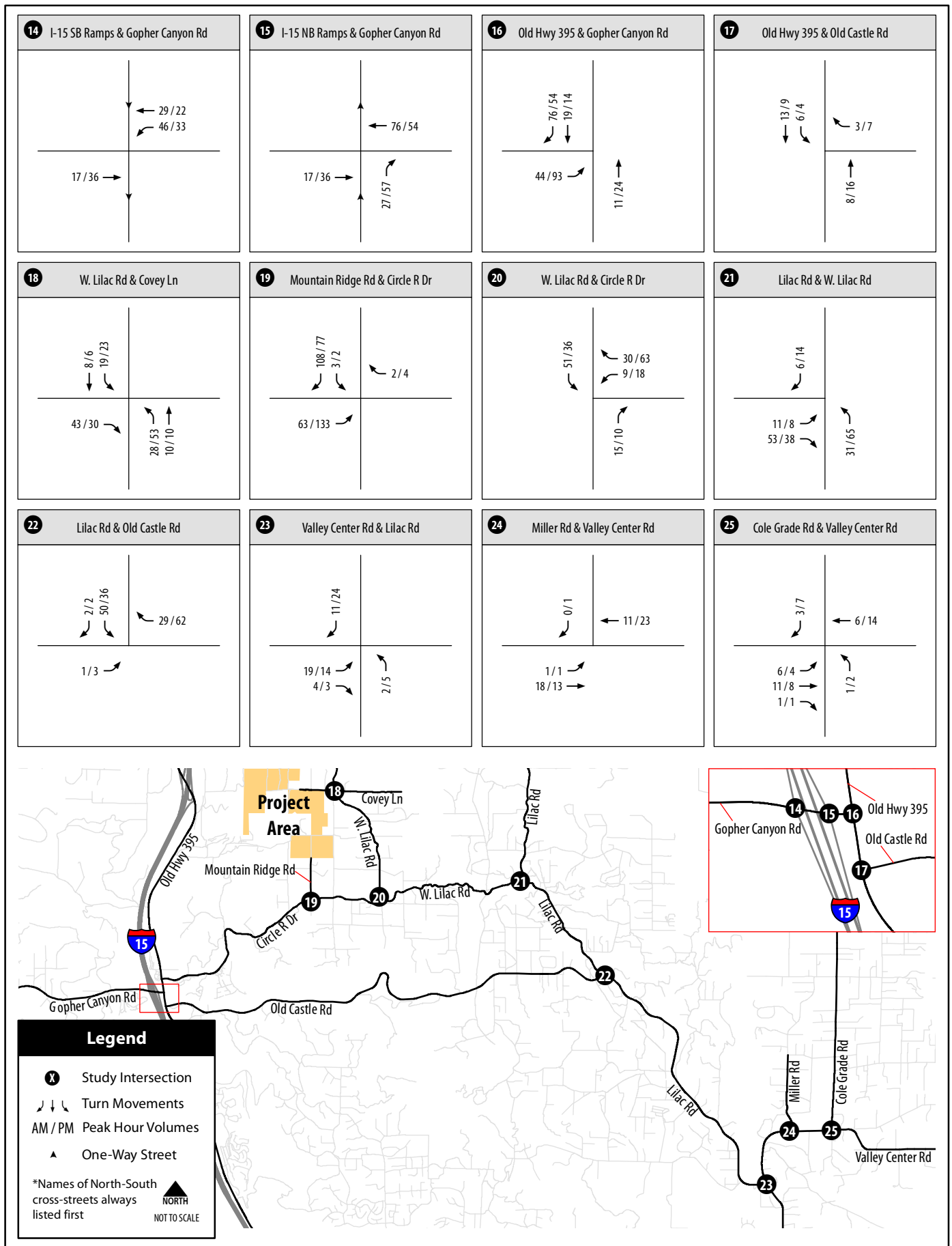


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Figure 4-14B (Intersections 1-13)

Project (Phase E, Buildout)

Trip Assignment (Intersection) - Existing Network

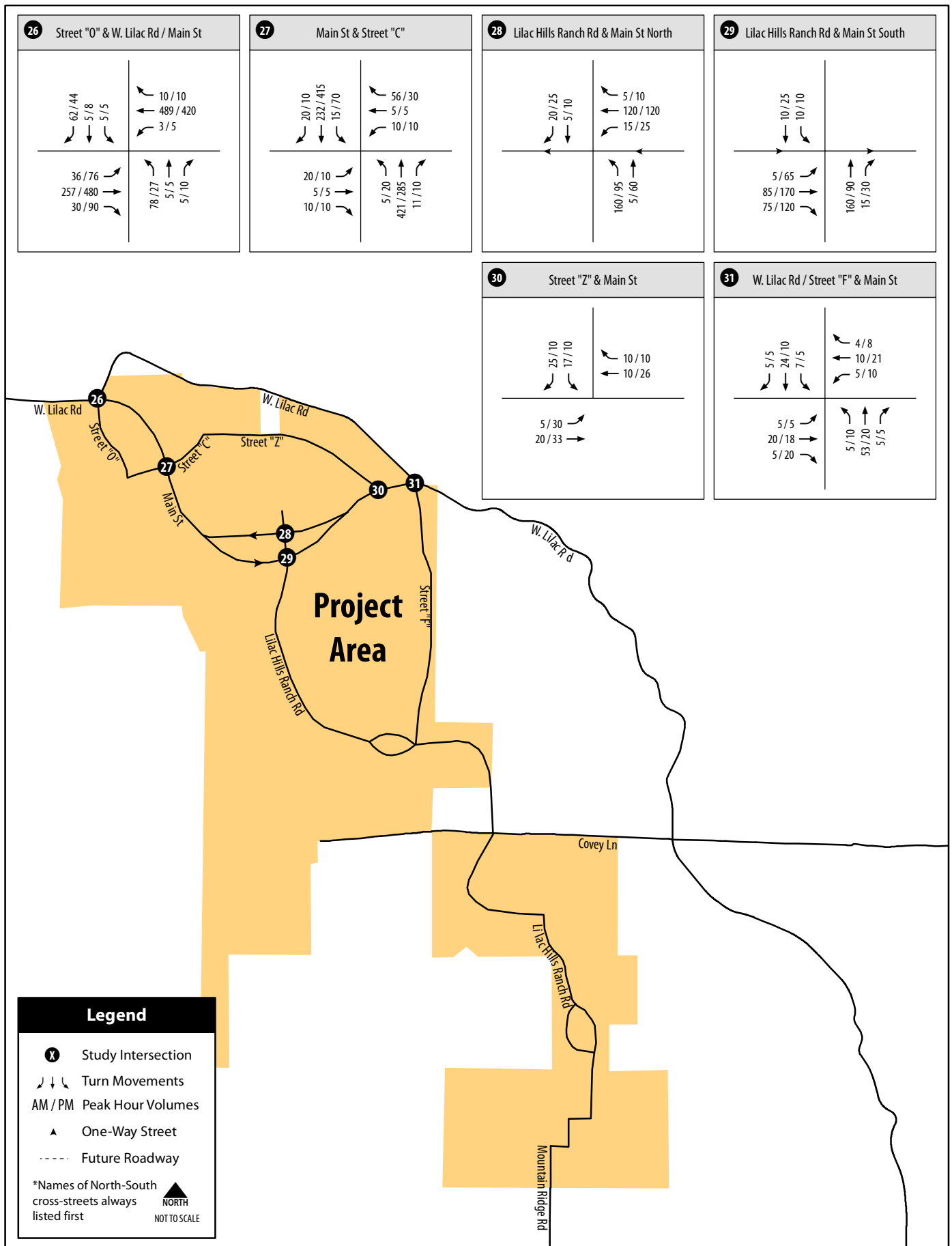


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Figure 4-14B (Intersections 14-25)

Project (Phase E, Buildout)

Trip Assignment (Intersection) - Existing Network

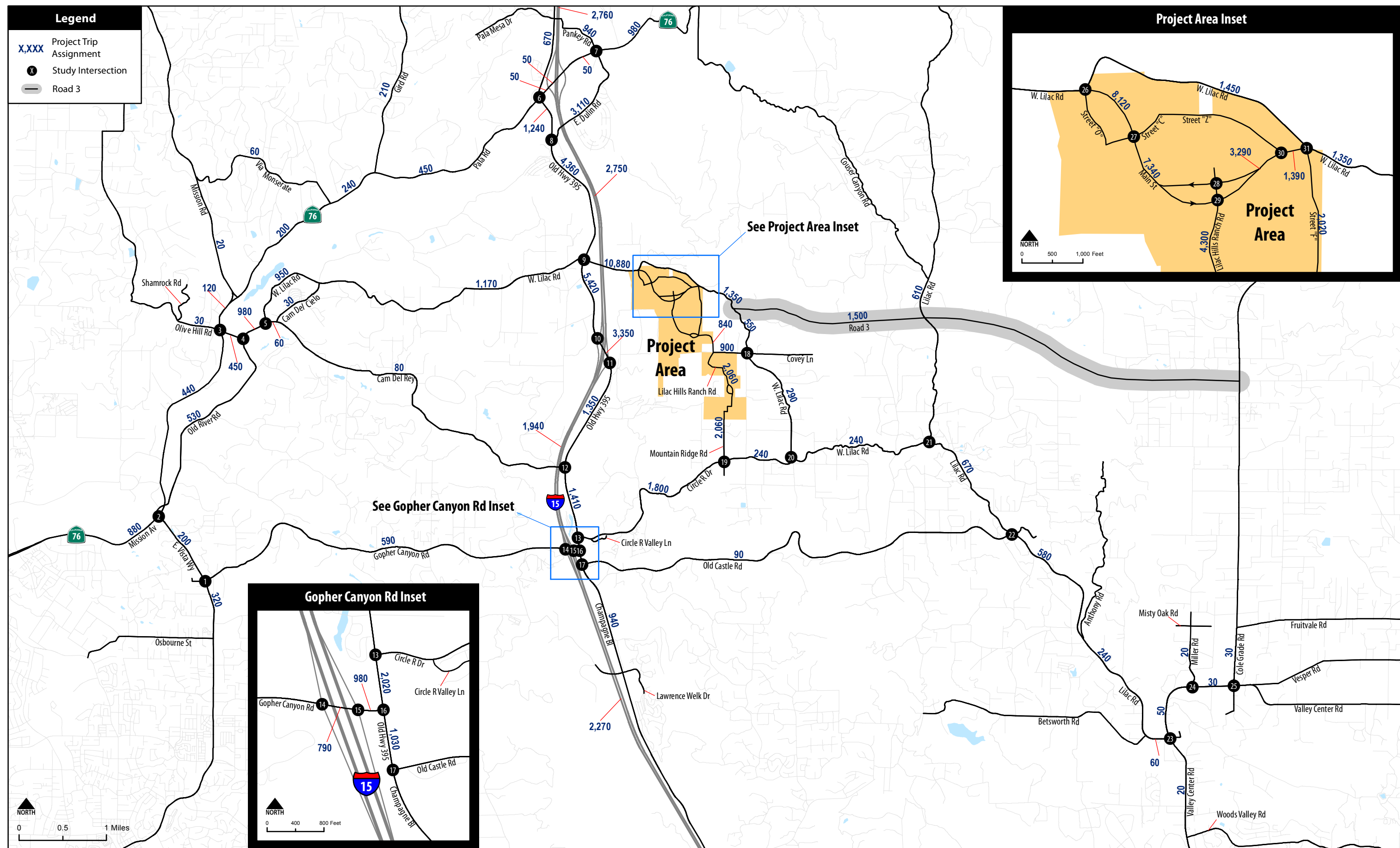


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Figure 4-14B (Intersections 26-31)

Project (Phase E, Buildout)

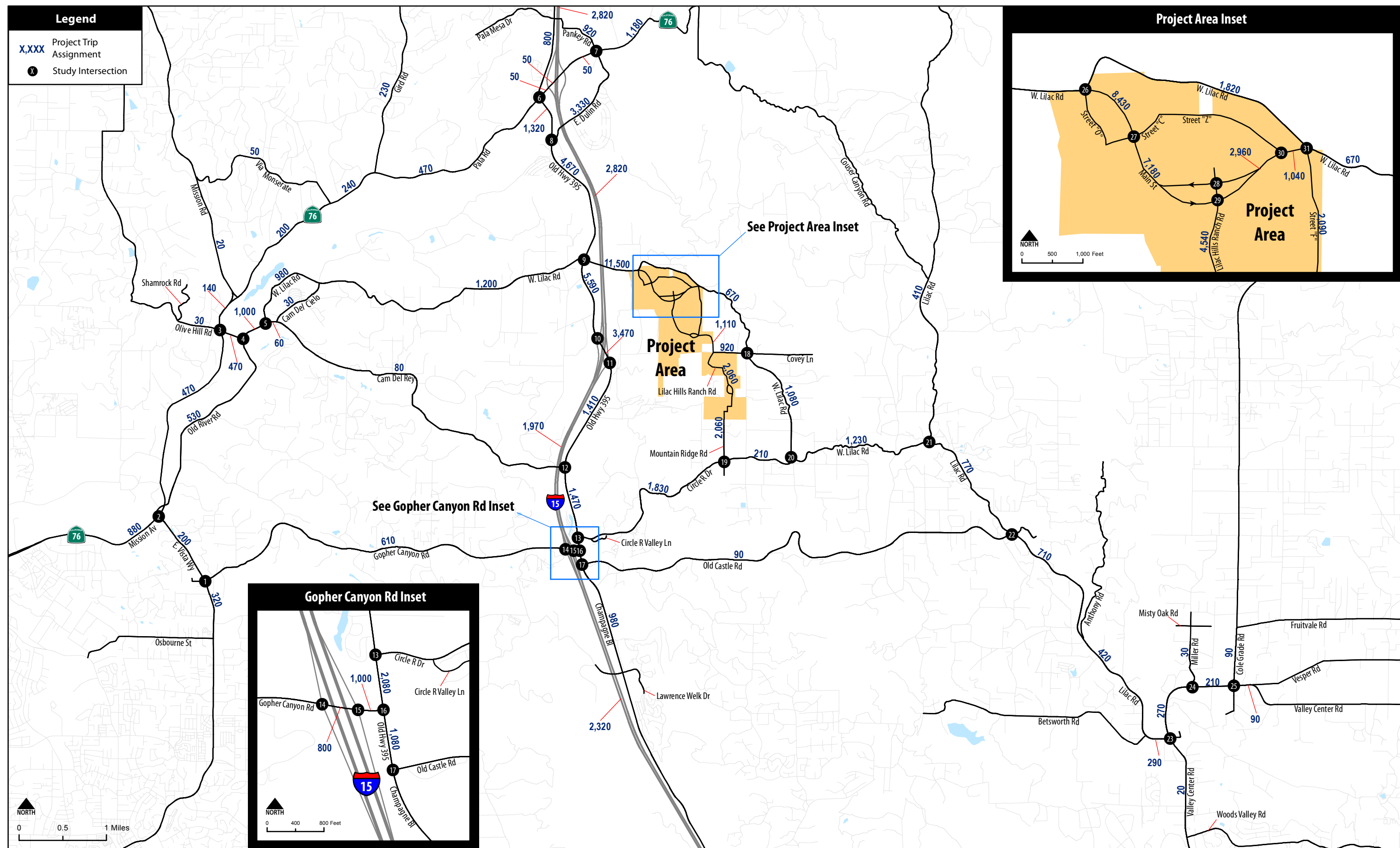
Trip Assignment (Intersection) - Existing Network



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Figure 4-15

**Project (Buildout) Trip Assignment (Roadway) -
Horizon Year Network with Road 3**



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Figure 4-16

**Project (Buildout) Trip Assignment (Roadway) -
Horizon Year Network without Road 3**

5.0 Existing Plus Project Conditions

This section provides an analysis of existing traffic conditions with the addition of project trips under the various traffic analysis phases of the Lilac Hills Ranch project.

5.1 Existing Plus Project (Phase A) Conditions

5.1.1 Existing Plus Project (Phase A) Roadway Network and Traffic Volumes

The Existing Plus Project (Phase A) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase A. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street “C”;
- Main Street, between Street “Z” and W. Lilac Road;
- Street “C” and Street “Z”;
- Birdsong Drive, between Street “Z” and W. Lilac Road;
- Intersection # 26, Street “O” / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street “C” – proposed roundabout;
- Intersection # 30, Street “Z” / Main Street – proposed one-way stop (southbound Street “Z” approach) controlled L-intersection; and
- Intersection # 31, Street “Z” / Main Street – proposed roundabout.

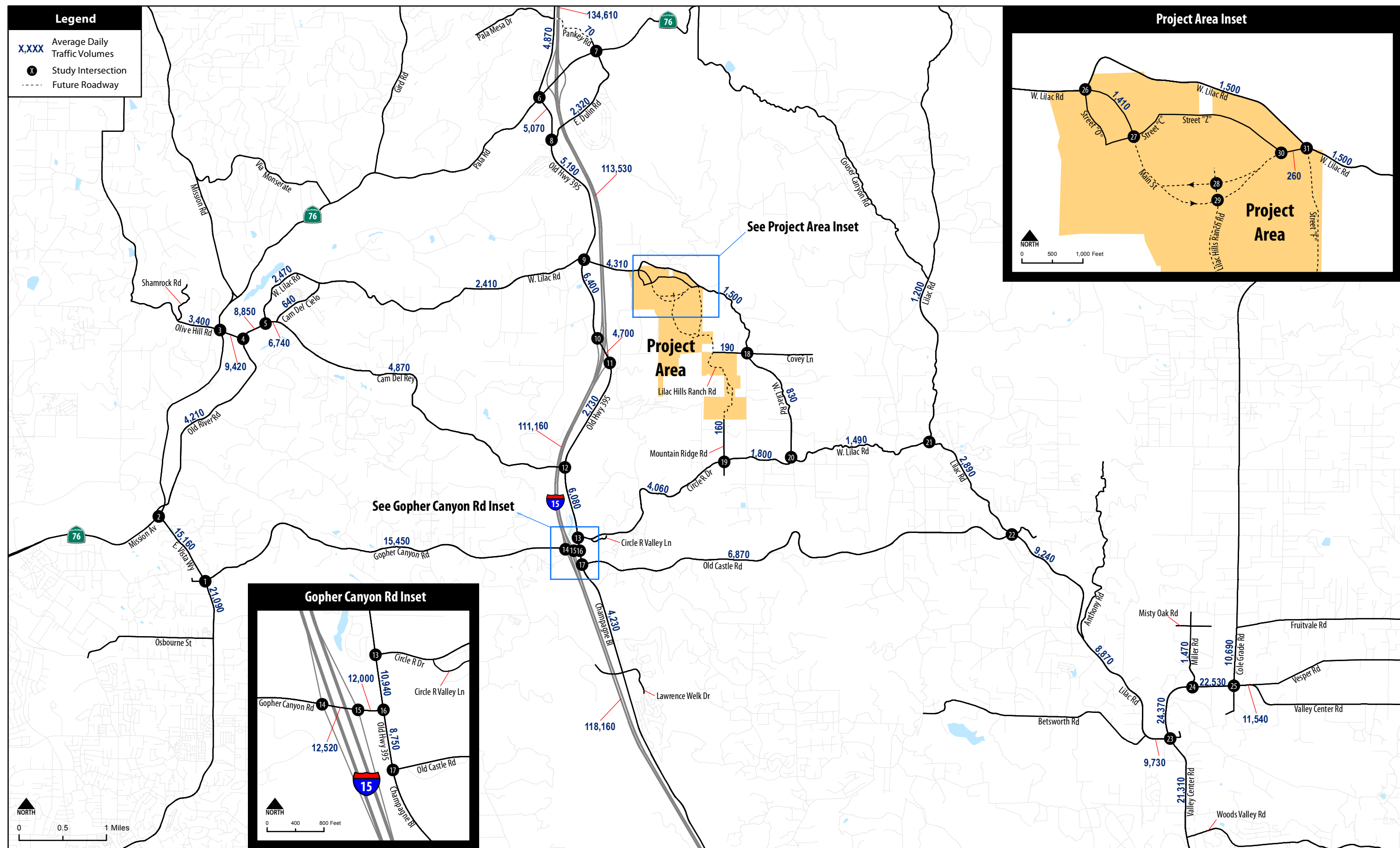
5.1.2 Existing Plus Project (Phase A) Traffic Conditions

Level of service analyses under Existing Plus Project (Phase A) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-1A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-1B**.

Roadway Segment Analysis

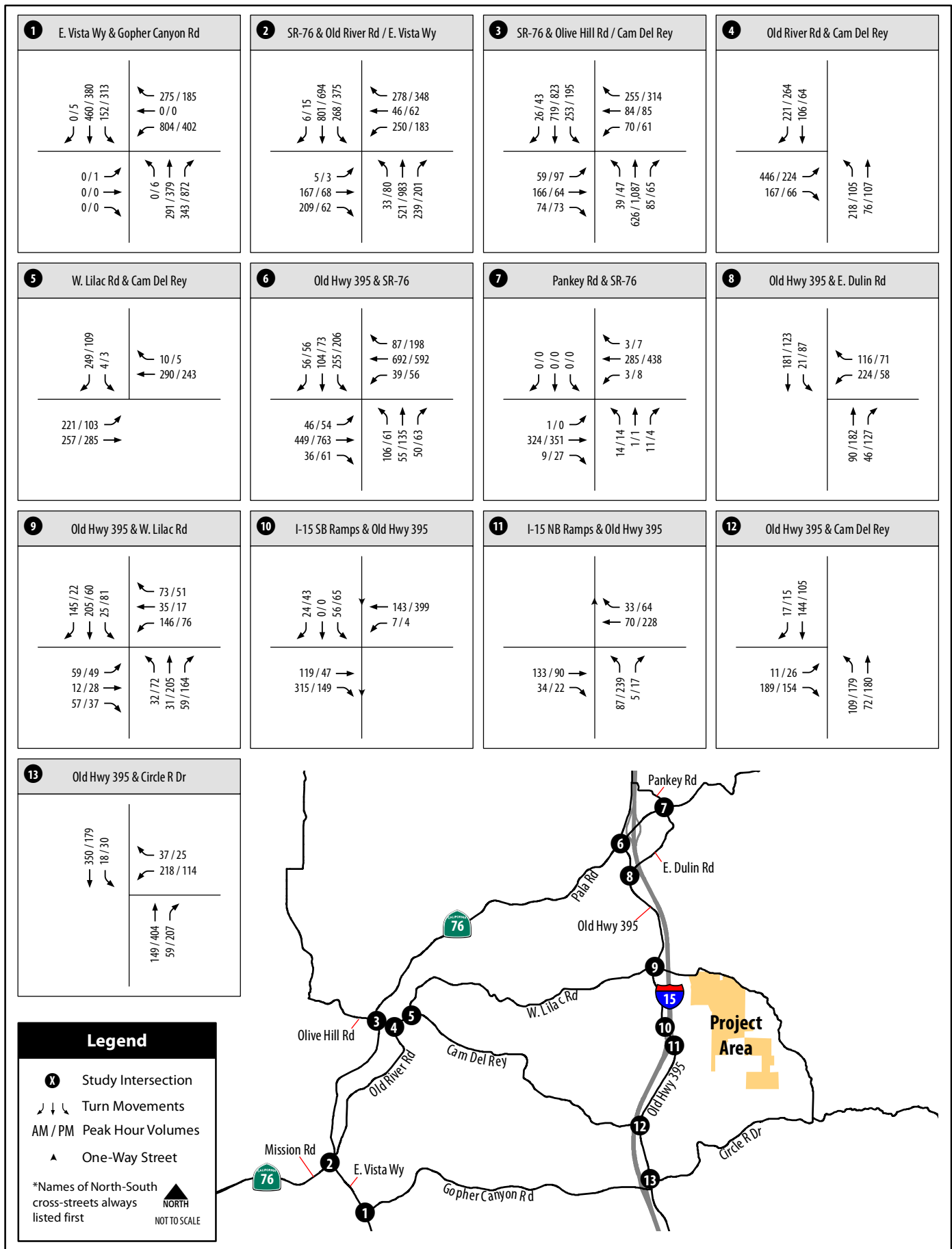
Table 5.1 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase A) conditions. As shown, similar to Existing conditions, the following three (3) roadway segments would continue to operate at substandard LOS E or F:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS E;
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E; and
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.



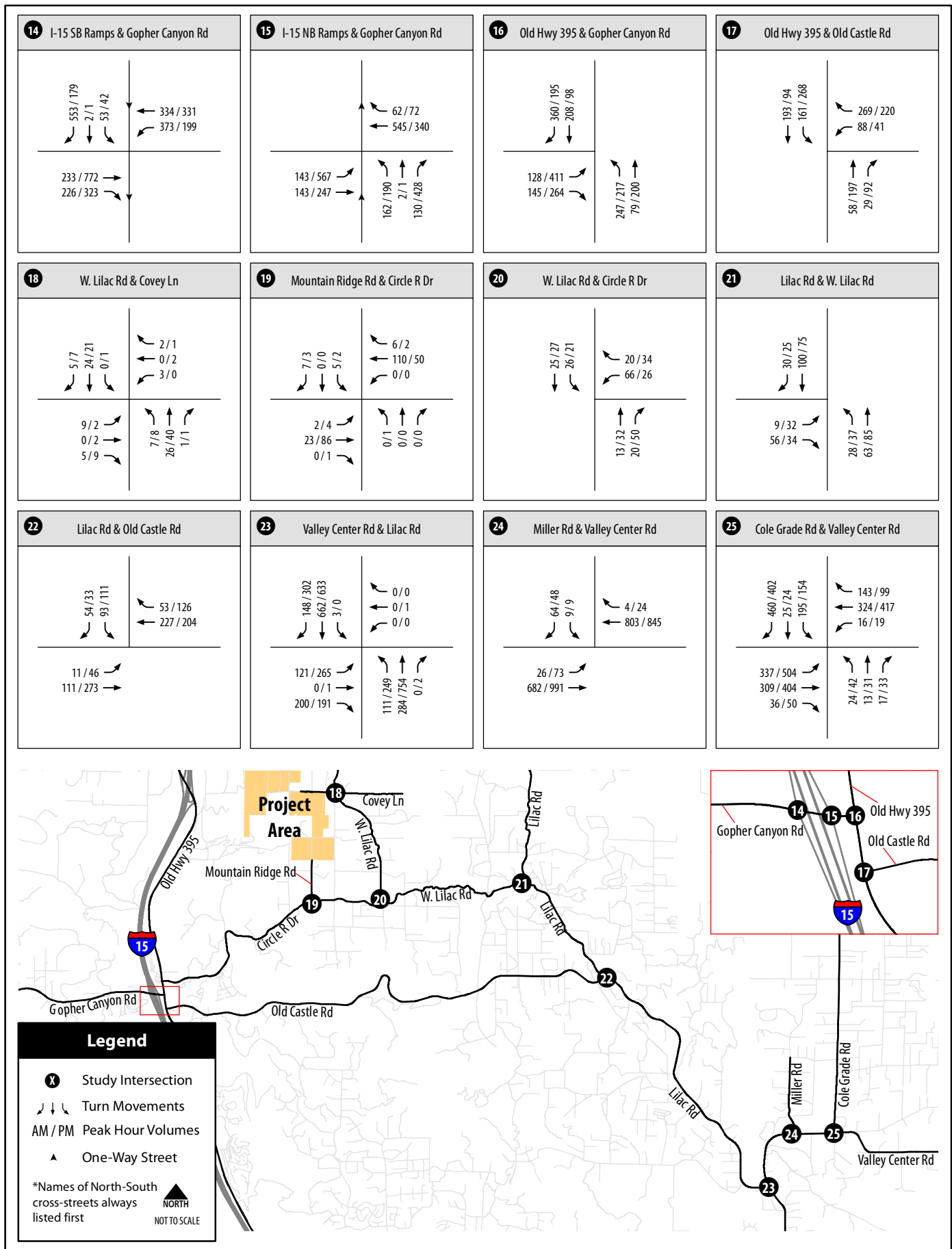
Lilac Hills Ranch Traffic Impact Study

Figure 5-1A
Roadway Average Daily Traffic Volumes -
Existing Plus Project (Phase A) Conditions



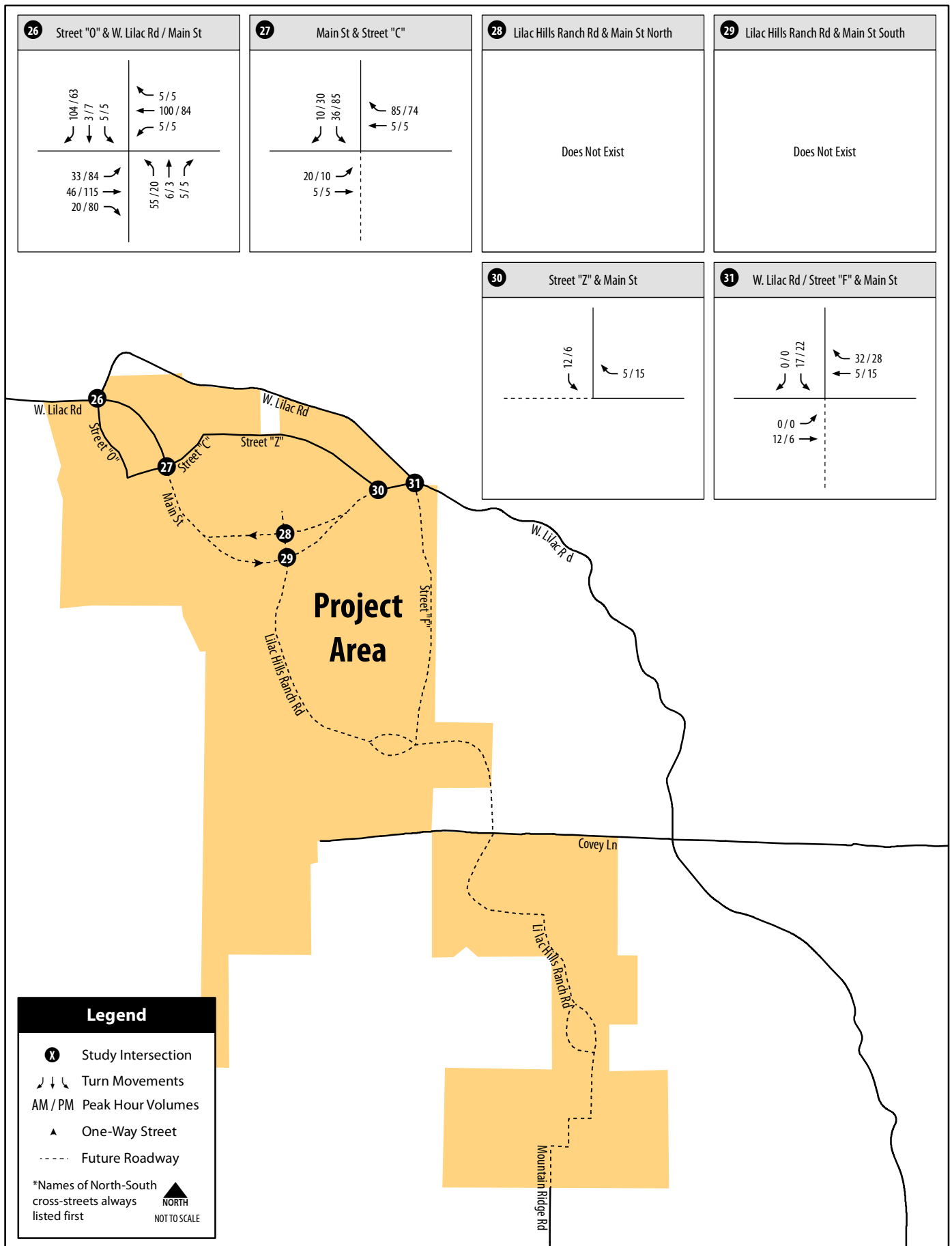
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Figure 5-1B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase A) Conditions



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Figure 5-1B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase A) Conditions



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Figure 5-1B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase A) Conditions

TABLE 5.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Roadway	From	To	With Project Phase A				Existing		Project Phase A ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	10,900	2,320	B	1,830	A	500	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	8,700	2,470	A	2,270	A	210	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	8,700	2,410	A	2,140	A	270	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	4,310	A	1,150	A	3,160	No
W. Lilac Road	Main Street	Street "F"	2-Ln	8,700	1,500	A	1,150	A	350	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	8,700	1,500	A	1,150	A	350	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	8,700	830	A	480	A	350	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	8,700	1,490	A	1,170	A	320	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	640	A	630	A	10	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,400	A	3,380	A	20	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,420	D	9,350	D	70	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	10,900	8,850	D	8,640	D	210	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-Ln w/ SM	13,500	6,740	C	6,730	C	10	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	8,700	4,870	A	4,850	A	20	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	10,900	15,450	E	15,320	E	130	No < 200ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	12,520	A	12,390	A	130	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	12,000	A	11,870	A	130	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	10,900	4,060	B	4,030	B	40	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	10,900	1,800	A	1,770	A	40	No

TABLE 5.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Roadway	From	To	With Project Phase A				Existing		Project Phase A ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	10,900	6,870	C	6,840	C	30	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,160	E	15,120	E	50	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,090	F	21,020	F	70	No < 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	10,900	4,210	C	4,070	B	140	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	13,500	4,230	B	4,170	B	60	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	10,900	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	8,700	1,200	A	1,150	A	50	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	8,700	2,890	A	2,640	A	250	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,240	D	9,010	D	240	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	8,870	D	8,740	D	140	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	9,730	D	9,620	D	110	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,310	C	21,290	C	20	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,370	B	24,280	B	90	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,530	C	22,440	C	90	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,540	D	11,490	D	50	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	8,000	1,470	A	1,460	A	0	No

TABLE 5.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Roadway	From	To	With Project Phase A				Existing		Project Phase A ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,690	D	10,660	D	30	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

RM = Raised Median.

SM = Striped Median.

TWLTL = Two-Way Left-Turn Lane.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch project would not result in any direct impacts to study roadway segments since it would not add 200 or more daily trips to the LOS E roadways or 100 or more daily trips to the LOS F roadway.

Intersection Analysis

Table 5.2 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase A) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase A) conditions are provided in **Appendix I**.

As shown in the table, the following four (4) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase A) conditions:

- SR-76 / Old River Road/E. Vista Way (Caltrans) – LOS E during the AM peak hour, and the Phase A project traffic would not add two seconds or more of additional delay to this intersection.
- SR-76 / Olive Hill Road/Camino Del Rey (Caltrans) – LOS E during the PM peak hour, and the Phase A project traffic would not add two seconds or more of additional delay to this intersection.
- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the Phase A project traffic would not add two seconds or more of additional delay to this intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during the PM peak hour, and the Phase A project traffic would not add two seconds or more of additional delay to this intersection.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch project would not result in any direct impacts to the study intersections.

Two-lane Highway Analysis

Table 5.3 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase A) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase A) conditions and the additional traffic generated by Phase A of the project would not cause any direct impacts to Old Highway 395.

TABLE 5.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Intersection	Traffic Control	With Project Phase A				Existing		Change in Delay (sec.) AM / PM	Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	27.9	C	49.4	D	24.3 / 48.7	C / D	3.6 / 0.7	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	74.0	E	52.8	D	73.9 / 52.3	E / D	<u>0.1</u> / 0.5	-	No Caltrans Int. < 2 sec.
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	44.5	D	61.7	E	43.6 / 60.8	D / E	0.9 / <u>0.9</u>	-	No Caltrans Int. < 2 sec.
4. Old River Road / Camino Del Rey	OWSC	23.4	D	12.2	B	23.2 / 12.2	D / B	0.2 / 0.0	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	16.2	C	11.1	B	15.4 / 11.0	C / B	0.8 / 0.1	-	No
6. Old Highway 395 / SR-76	Signal	43.1	D	43.5	D	43.0 / 42.2	D / D	0.1 / 1.3	-	No
7. Pankey Road / SR-76	TWSC	12.9	B	15.4	C	12.5 / 15.2	B / C	0.4 / 0.2	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	14.7	B	13.0	B	14.6 / 11.2	B / B	0.1 / 1.8	-	No
9. Old Highway 395 / W. Lilac Road	TWSC	19.3	C	21.9	C	18.5 / 13.3	C / B	0.8 / 8.6	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	13.3	B	12.1	B	10.6 / 12.1	B / B	2.7 / 0.0	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	10.2	B	12.9	B	9.9 / 11.2	A / B	0.3 / 1.7	-	No

TABLE 5.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Intersection	Traffic Control	With Project Phase A				Existing		Change in Delay (sec.) AM / PM	Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
12. Old Highway 395 / Camino Del Rey	OWSC	10.2	B	11.3	B	10.1 / 11.0	B / B	0.1 / 0.3	-	No
13. Old Highway 395 / Circle R Drive	OWSC	21.5	C	23.6	C	20.4 / 22.5	C / C	1.1 / 1.1	-	No
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	470.0	F	173.0	F	468.2 / 173.0	F / F	<u>1.8 / 0.0</u>	-	No Caltrans Int. < 2 sec.
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	31.3	D	1945.5	F	30.5 / 1945.4	D / F	0.8 / <u>0.1</u>	-	No Caltrans Int. < 2 sec.
16. Old Highway 395 / Gopher Canyon Road	Signal	17.3	B	9.5	A	16.1 / 8.8	B / A	1.2 / 0.7	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.9	B	16.2	B	13.9 / 15.7	B / B	0.0 / 0.5	-	No
18. W. Lilac Road / Covey Lane	TWSC	8.9	A	9.3	A	8.8 / 9.1	B / A	0.1 / 0.2	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.2	A	9.6	A	9.3 / 9.6	A / A	0.0 / 0.0	-	No
20. W. Lilac Road / Circle R Drive	OWSC	9.6	A	9.3	A	9.3 / 9.3	A / A	0.3 / 0.0	-	No
21. Lilac Road / W. Lilac Road	OWSC	9.7	A	10.2	B	9.6 / 9.9	A / A	0.1 / 0.3	-	No
22. Lilac Road / Old Castle Road	OWSC	12.2	B	18.6	C	11.8 / 17.8	B / C	0.4 / 0.8	-	No
23. Valley Center Rd / Lilac Road	Signal	10.6	B	22.8	C	10.5 / 22.6	B / C	0.1 / 0.2	-	No

TABLE 5.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Intersection	Traffic Control	With Project Phase A				Existing		Change in Delay (sec.) AM / PM	Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
24. Miller Road / Valley Center Road	OWSC	17.0	C	25.5	D	16.9 / 25.2	C / D	0.1 / 0.3	-	No
25. Cole Grade Road / Valley Center Road	Signal	31.1	C	34.9	C	31.1 / 34.9	C / C	0.0 / 0.0	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	4.6	A	5.3	A	DNE	DNE	4.6 / 5.3	-	No
27. Main Street / Street "C"	RA	3.9	A	4.1	A	DNE	DNE	3.9 / 4.1	-	No
28. Lilac Hills Ranch Road / Main Street North	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
29. Lilac Hills Ranch Road / Main Street South	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
30. Street "Z" / Main Street	OWSC	8.6	A	8.6	A	DNE	DNE	8.6 / 8.6	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.5	A	3.5	A	DNE	DNE	3.5 / 3.5	-	No

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E of F.

AWSC = All-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

OWSC = One-Way Stop Controlled.

RA = Roundabout.

DNE = Does Not Exist.

For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

TABLE 5.3
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

2-Ln Highway	From	To	With Project Phase A			Existing		Project Phase A ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	4,870	D or better	4,770	D or better	100	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,070	D or better	4,720	D or better	350	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	5,190	D or better	4,340	D or better	850	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	6,400	D or better	4,450	D or better	1,950	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	4,700	D or better	3,600	D or better	1,110	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	2,730	D or better	2,430	D or better	300	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	6,080	D or better	5,820	D or better	270	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	10,940	D or better	10,710	D or better	230	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	8,750	D or better	8,660	D or better	90	No

Source: Chen Ryan Associates; January 2013

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.4** displays the resulting level of service for I-15 under Existing Plus Project (Phase A) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase A) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the project would not cause any direct impacts to study area freeway segments.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase A) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.5** and analysis worksheets for the Existing Plus Project (Phase A) conditions are provided in **Appendix J**.

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase A) conditions.

TABLE 5.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	134,590	8.4%	11,371	0.64	4	0.95	6.75%	1,965	0.836	D	0.004	No
I-15	Old Highway 395 to SR-76	134,610	7.4%	10,014	0.73	4	0.95	6.75%	1,993	0.848	D	0.004	No
I-15	SR-76 to Old Highway 395	113,530	7.8%	8,880	0.69	4	0.95	8.40%	1,669	0.710	C	0.003	No
I-15	Old Highway 395 to Gopher Canyon Road	111,160	8.1%	8,977	0.67	4	0.95	8.40%	1,644	0.700	C	0.007	No
I-15	Gopher Canyon Road to Deer Springs Road	118,160	8.1%	9,543	0.67	4	0.95	13.20%	1,788	0.761	C	0.007	No
I-15	Deer Springs Road to Centre City Parkway	117,940	8.0%	9,475	0.66	4	0.95	13.20%	1,766	0.751	C	0.006	No
I-15	Centre City Parkway to El Norte Parkway	111,750	8.0%	8,978	0.66	4	0.95	13.20%	1,673	0.712	C	0.005	No
I-15	El Norte Parkway to SR-78	127,690	7.9%	10,050	0.66	4	0.95	10.00%	1,846	0.786	C	0.004	No
I-15	SR-78 to W Valley Parkway	192,510	8.1%	15,667	0.60	5+2ML	0.95	10.00%	1,484	0.631	C	0.002	No
I-15	W Valley Parkway to Auto Parkway	179,430	8.1%	14,603	0.60	5+2ML	0.95	10.00%	1,383	0.589	B	0.001	No
I-15	Auto Parkway to W Citracado Parkway	172,420	7.8%	13,372	0.60	5+2ML	0.95	10.00%	1,259	0.536	B	0.001	No

TABLE 5.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	196,370	7.8%	15,230	0.60	5+2ML	0.95	7.00%	1,413	0.601	B	0.001	No
I-15	Via Rancho Parkway to Bernardo Drive	198,340	7.4%	14,597	0.58	5+2ML	0.95	7.00%	1,314	0.559	B	0.001	No
I-15	Bernardo Drive to Rancho Bernardo Road	201,320	7.4%	14,817	0.58	5+2ML	0.95	7.00%	1,334	0.568	B	0.001	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,200	7.3%	15,359	0.54	5+2ML	0.95	7.00%	1,281	0.545	B	0.001	No
I-15	Bernardo Center Drive to Camino Del Norte	214,290	7.3%	15,733	0.54	5+2ML	0.95	7.00%	1,312	0.558	B	0.001	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

TABLE 5.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,517	>1500: (Over Capacity)
	PM	1,270	1200-1500: (At Capacity)
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,204	1200-1500: (At Capacity)
	PM	1,372	1200-1500: (At Capacity)
SR-76 / Old Highway 395	AM	1,018	<1200: (Under Capacity)
	PM	1,062	<1200: (Under Capacity)

Source: Chen Ryan Associates; January 2013

5.1.3 Existing Plus Project (Phase A) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase A) conditions.

Roadway Segments

None of the study area roadway segments would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase A) conditions.

Intersections

None of the study area intersections would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase A) conditions.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase A) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase A) conditions.

Table 5.6 summarizes potential impacts and recommended mitigation measures associated with Phase A of the Lilac Hills Ranch project.

TABLE 5.6
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Roadway Segment</i>		
None	-	-
<i>Intersection</i>		
None	-	-
<i>Two-Lane Highway</i>		
None	-	-
<i>Freeway</i>		
None	-	-

Source: Chen Ryan Associates; January 2013

5.2 Existing Plus Project (Phase B) Conditions

5.2.1 Existing Plus Project (Phase B) Roadway Network and Traffic Volumes

The Existing Plus Project (Phase B) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase B. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street “C”;
- Main Street, between Street “Z” and W. Lilac Road;
- Street “C” and Street “Z”;
- Birdsong Drive, between Street “Z” and W. Lilac Road;
- Covey Lane, west of W. Lilac Road;
- Intersection # 26, Street “O” / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street “C” – proposed roundabout;
- Intersection # 30, Street “Z” / Main Street – proposed one-way stop (southbound Street “Z” approach) controlled L-intersection; and
- Intersection # 31, Street “Z” / Main Street – proposed roundabout.

5.2.2 Existing Plus Project (Phase B) Traffic Conditions

Level of service analyses under Existing Plus Project (Phase B) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed

separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-2A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-2B**.

Roadway Segment Analysis

Table 5.7 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase B) conditions. As shown, similar to Existing conditions, the following three (3) roadway segments would continue to operate at substandard LOS E or F:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS E;
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E; and
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the Lilac Hills Ranch project would not result in any direct impacts to study roadway segments since it would not add 200 or more daily trips to the LOS E roadways or 100 or more daily trips to the LOS F roadway.

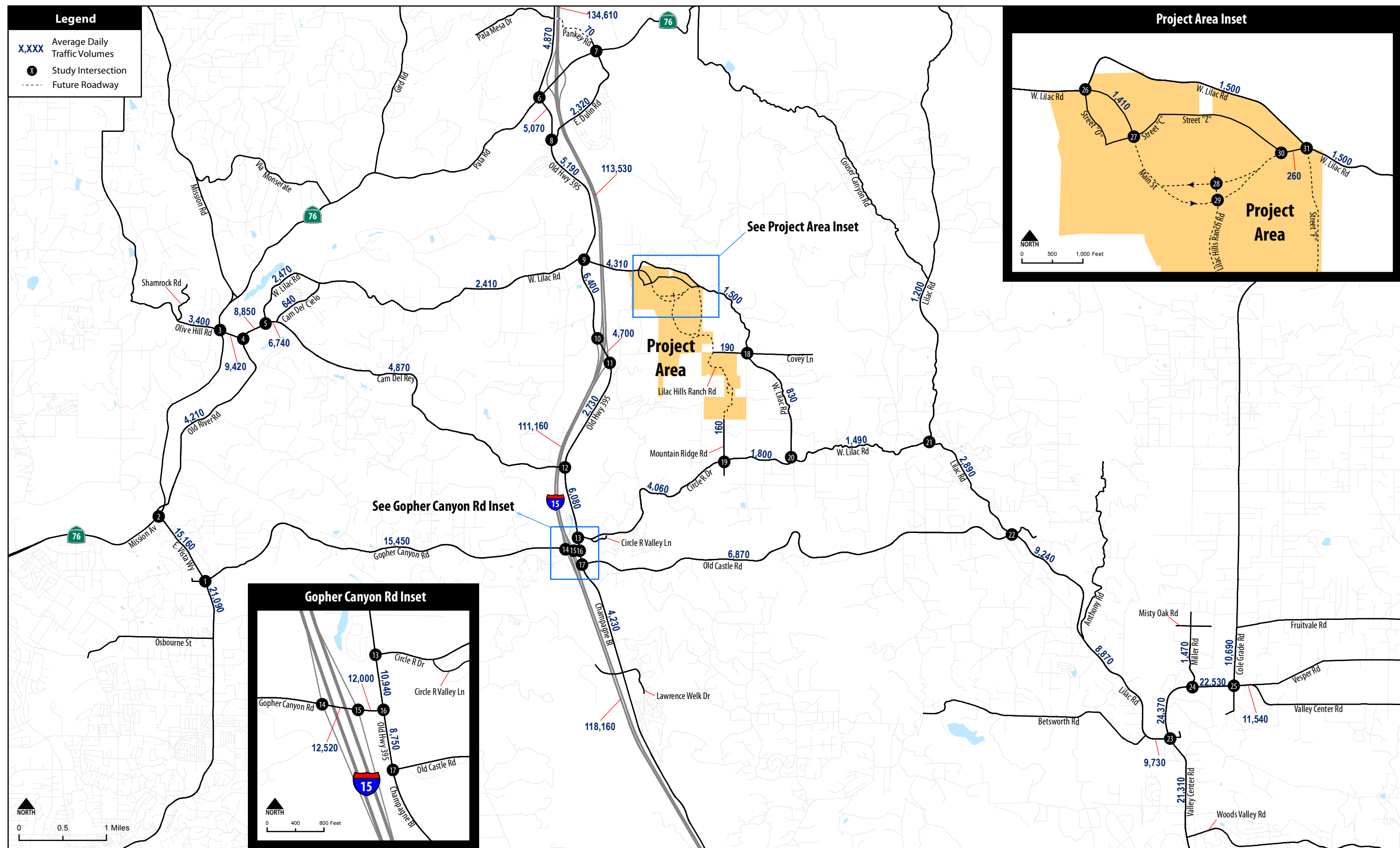
Intersection Analysis

Table 5.8 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase B) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase B) conditions are provided in **Appendix K**.

As shown in the table, the following four (4) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase B) conditions:

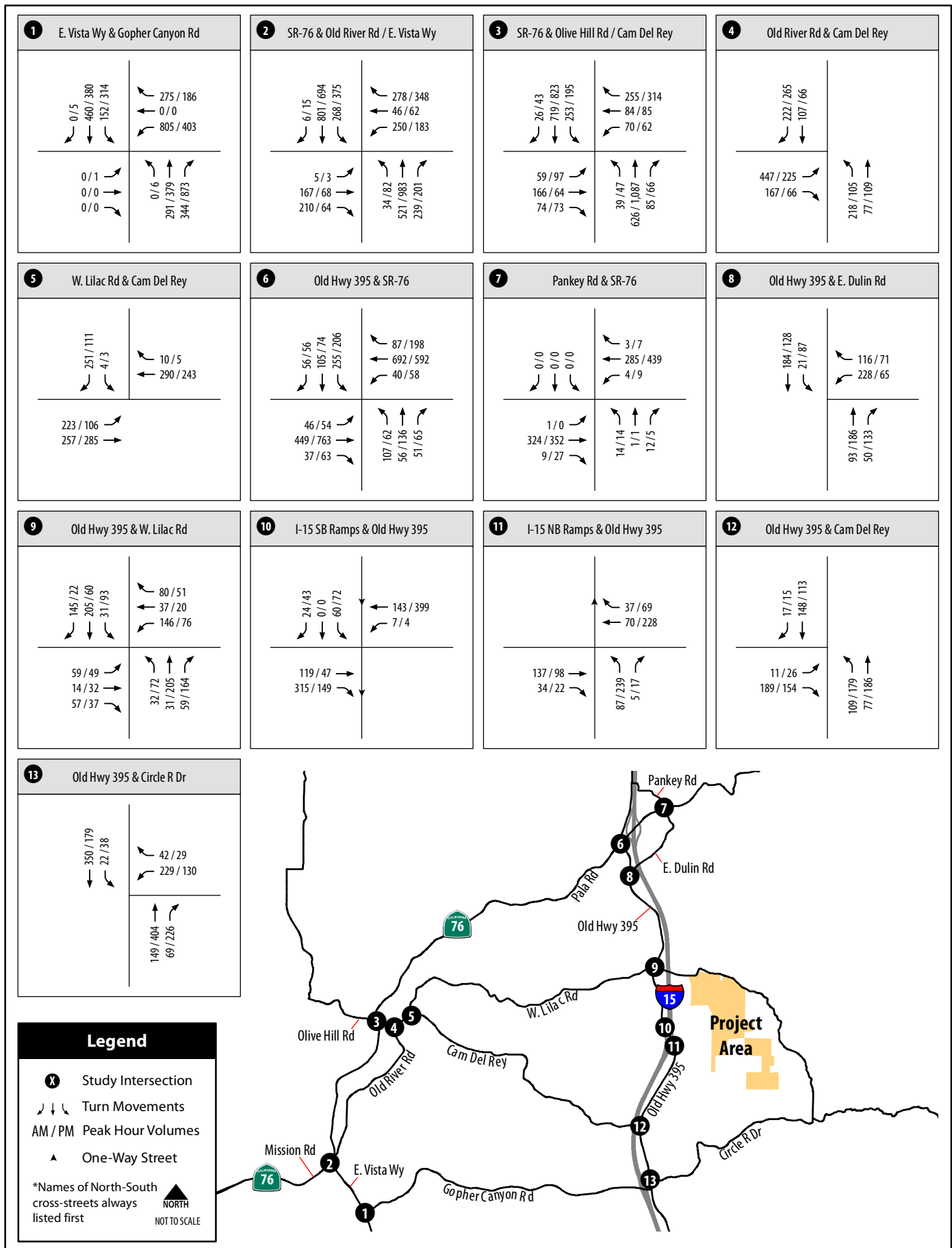
- SR-76 / Old River Road/E. Vista Way (Caltrans) – LOS E during the AM peak hour, and the Phase B project traffic would not add two seconds or more of additional delay to this intersection.
- SR-76 / Olive Hill Road/Camino Del Rey (Caltrans) – LOS E during the PM peak hour, and the Phase B project traffic would not add two seconds or more of additional delay to this intersection.
- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the Phase B project traffic would add two seconds or more of additional delay to this intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during the PM peak hour, and the Phase B project traffic would add two seconds or more of additional delay to this intersection.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the Lilac Hills Ranch project would have a direct impact at the intersections of I-15 SB Ramps / Gopher Canyon Road and I-15 NB Ramps / Gopher Canyon Road.



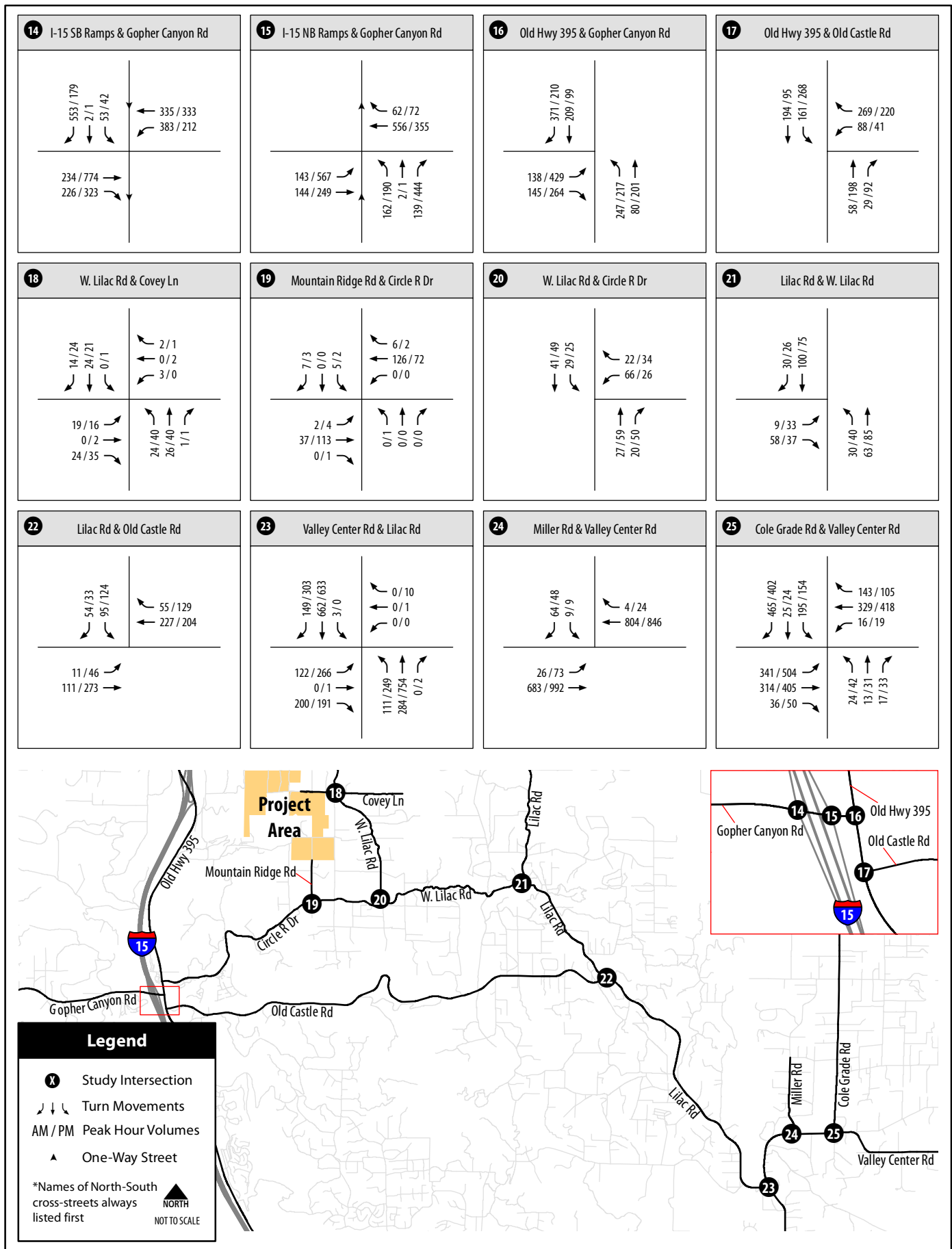
Lilac Hills Ranch Traffic Impact Study

Figure 5-1A
Roadway Average Daily Traffic Volumes -
Existing Plus Project (Phase A) Conditions



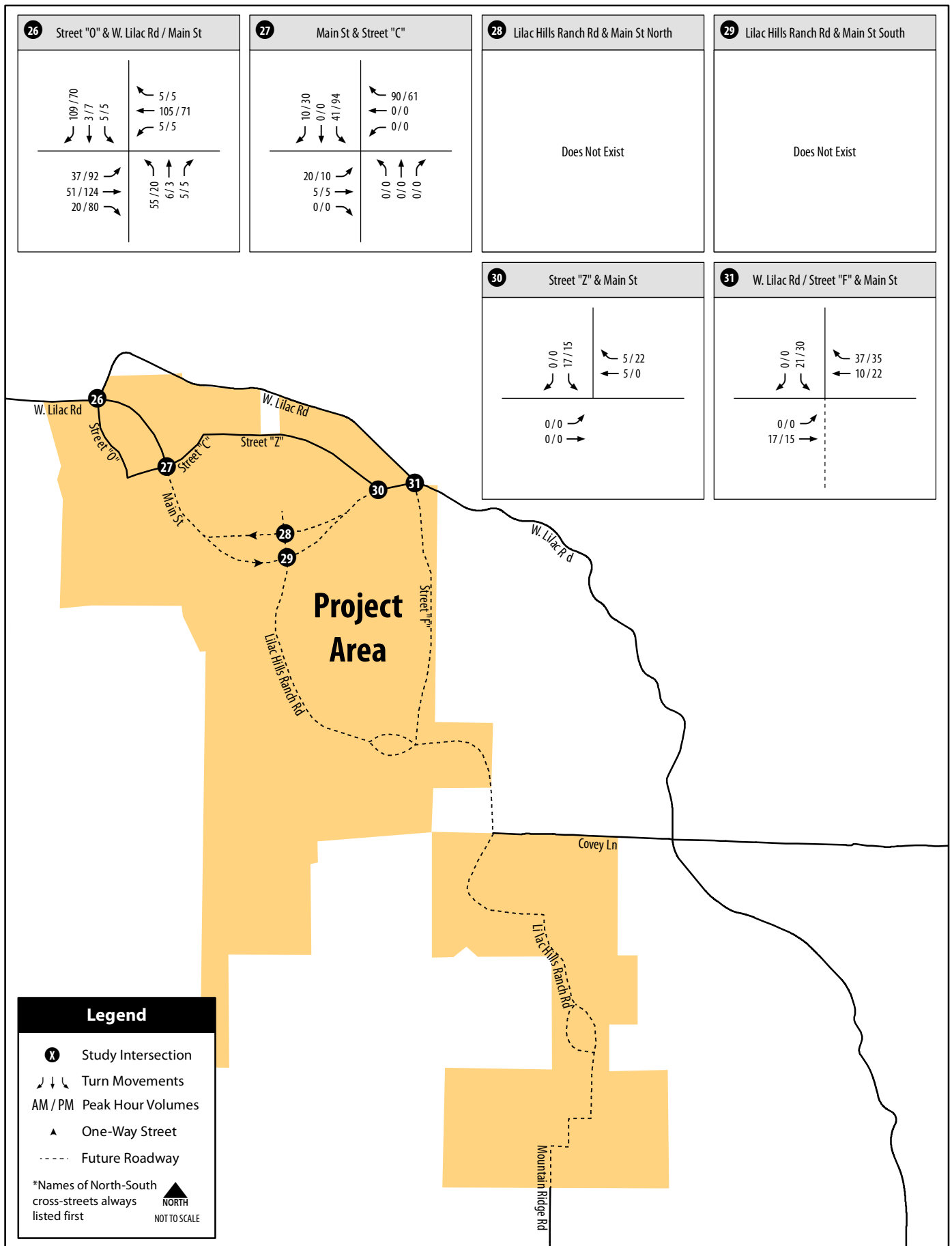
Lilac Hills Ranch Traffic Impact Study

Figure 5-2B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase B) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-2B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase B) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-2B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase B) Conditions

TABLE 5.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Roadway	From	To	With Project Phase B				Existing		Project Phase B ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	10,900	2,490	B	1,830	A	670	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	8,700	2,540	A	2,270	A	280	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	8,700	2,500	A	2,140	A	360	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	4,730	A	1,150	A	3,590	No
W. Lilac Road	Main Street	Street "F"	2-Ln	8,700	1,920	A	1,150	A	770	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	8,700	1,920	A	1,150	A	770	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	8,700	1,610	A	480	A	1,130	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	8,700	1,590	A	1,170	A	420	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	650	A	630	A	10	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,410	A	3,380	A	30	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,450	D	9,350	D	90	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	10,900	8,930	D	8,640	D	290	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-Ln w/ SM	13,500	6,750	C	6,730	C	20	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	8,700	4,880	A	4,850	A	30	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	10,900	15,490	E	15,320	E	180	No < 200ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	12,770	A	12,390	A	380	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	12,440	A	11,870	A	580	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	10,900	4,730	C	4,030	B	700	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	10,900	2,480	B	1,770	A	710	No

TABLE 5.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Roadway	From	To	With Project Phase B				Existing		Project Phase B ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	10,900	6,880	C	6,840	C	40	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,180	E	15,120	E	70	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,120	F	21,020	F	<100	No < 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	10,900	4,260	C	4,070	B	190	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	13,500	4,250	B	4,170	B	80	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	10,900	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	8,700	1,220	A	1,150	A	70	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	8,700	2,980	A	2,640	A	340	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,320	D	9,010	D	320	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	8,920	D	8,740	D	180	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	9,770	D	9,620	D	150	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,310	C	21,290	C	20	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,400	B	24,280	B	120	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,560	C	22,440	C	120	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,560	D	11,490	D	70	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	8,000	1,470	A	1,460	A	0	No

**TABLE 5.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS**

Roadway	From	To	With Project Phase B				Existing		Project Phase B ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,700	D	10,660	D	40	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

RM = Raised Median.

SM = Striped Median.

TWLTL = Two-Way Left-Turn Lane.

**TABLE 5.8
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS**

Intersection	Traffic Control	With Project Phase B				Existing		Change in Delay (sec.) AM / PM	Phase B Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	27.9	C	50.5	D	24.3 / 48.7	C / D	3.6 / 1.8	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	74.2	E	53.1	D	73.9 / 52.3	E / D	<u>0.3</u> / 0.8	-	No Caltrans Int. < 2 sec.
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	44.7	D	61.7	E	43.6 / 60.8	D / E	1.1 / <u>0.9</u>	-	No Caltrans Int. < 2 sec.

TABLE 5.8
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	Traffic Control	With Project Phase B				Existing			Phase B Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) AM / PM		
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
4. Old River Road / Camino Del Rey	OWSC	23.4	D	12.2	B	23.2 / 12.2	D / B	0.2 / 0.0	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	16.3	C	11.1	B	15.4 / 11.0	C / B	0.9 / 0.1	-	No
6. Old Highway 395 / SR-76	Signal	43.2	D	44.9	D	43.0 / 42.2	D / D	0.2 / 2.7	-	No
7. Pankey Road / SR-76	TWSC	14.1	B	18.8	C	12.5 / 15.2	B / C	1.6 / 3.6	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	14.7	B	13.6	B	14.6 / 11.2	B / B	0.1 / 2.4	-	No
9. Old Highway 395 / W. Lilac Road	TWSC	22.3	C	24.2	D	18.5 / 13.3	C / B	3.8 / 10.9	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	11.0	B	12.1	B	10.6 / 12.1	B / B	0.4 / 0.0	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	10.2	B	13.1	B	9.9 / 11.2	A / B	0.3 / 1.9	-	No
12. Old Highway 395 / Camino Del Rey	OWSC	10.2	B	11.3	B	10.1 / 11.0	B / B	0.1 / 0.3	-	No
13. Old Highway 395 / Circle R Drive	OWSC	23.6	C	28.0	D	20.4 / 22.5	C / C	3.2 / 5.5	-	No
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	470.3	F	173.0	F	468.2 / 173.0	F / F	<u>2.1 / 0.0</u>	-	Yes Caltrans Int. > 2 sec.

TABLE 5.8
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	Traffic Control	With Project Phase B				Existing			Phase B Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) AM / PM		
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	31.8	D	1970.9	F	30.5 / 1945.4	D / F	1.3 / <u>25.5</u>	-	Yes Caltrans Int. > 2 sec.
16. Old Highway 395 / Gopher Canyon Road	Signal	17.6	B	11.2	B	16.1 / 8.8	B / A	1.5 / 2.4	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.9	B	16.2	B	13.9 / 15.7	B / B	0.0 / 0.5	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.3	A	9.9	A	8.8 / 9.1	B / A	0.5 / 0.8	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.5	A	9.5	A	9.3 / 9.6	A / A	0.2 / 0.0	-	No
20. W. Lilac Road / Circle R Drive	OWSC	9.9	A	9.7	A	9.3 / 9.3	A / A	0.6 / 0.4	-	No
21. Lilac Road / W. Lilac Road	OWSC	9.8	A	10.2	B	9.6 / 9.9	A / A	0.2 / 0.3	-	No
22. Lilac Road / Old Castle Road	OWSC	12.3	B	19.9	C	11.8 / 17.8	B / C	0.5 / 2.1	-	No
23. Valley Center Rd / Lilac Road	Signal	10.6	B	26.4	C	10.5 / 22.6	B / C	0.1 / 3.8	-	No
24. Miller Road / Valley Center Road	OWSC	17	C	25.6	D	16.9 / 25.2	C / D	0.1 / 0.4	-	No
25. Cole Grade Road / Valley Center Road	Signal	31.4	C	35.1	D	31.1 / 34.9	C / C	0.3 / 0.2	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	4.6	A	5.5	A	DNE	DNE	4.6 / 5.5	-	No
27. Main Street / Street "C"	RA	3.9	A	4.1	A	DNE	DNE	3.9 / 4.1	-	No

TABLE 5.8
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	Traffic Control	With Project Phase B				Existing			Phase B Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) AM / PM		
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
28. Lilac Hills Ranch Road / Main Street North	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
29. Lilac Hills Ranch Road / Main Street South	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
30. Street "Z" / Main Street	OWSC	8.6	A	8.6	A	DNE	DNE	8.6 / 8.6	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.5	A	3.7	A	DNE	DNE	3.5 / 3.7	-	No

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E of F.

AWSC = All-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

OWSC = One-Way Stop Controlled.

RA = Roundabout.

DNE = Does Not Exist.

For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

Two-Lane Highway Analysis

Table 5.9 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase B) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase B) conditions and the additional traffic generated by Phase B of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.10** displays the resulting level of service for I-15 under Existing Plus Project (Phase B) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase B) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the project would not cause any direct impacts to study area freeway segments.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase B) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.11** and analysis worksheets for the Existing Plus Project (Phase B) conditions are provided in **Appendix L**.

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase B) conditions.

**TABLE 5.9
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS**

2-Ln Highway	From	To	With Project Phase B			Existing		Project Phase B ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	4,900	D or better	4,770	D or better	140	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,190	D or better	4,720	D or better	470	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	5,480	D or better	4,340	D or better	1,140	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	6,400	D or better	4,450	D or better	1,950	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	4,810	D or better	3,600	D or better	1,210	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	2,910	D or better	2,430	D or better	480	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	6,280	D or better	5,820	D or better	460	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	11,410	D or better	10,710	D or better	710	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	8,780	D or better	8,660	D or better	120	No

Source: Chen Ryan Associates; January 2013

**TABLE 5.10
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS**

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	134,790	8.4%	11,387	0.64	4	0.95	6.75%	1,968	0.838	D	0.005	No
I-15	Old Highway 395 to SR-76	134,820	7.4%	10,030	0.73	4	0.95	6.75%	1,996	0.849	D	0.005	No

TABLE 5.10
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	SR-76 to Old Highway 395	113,710	7.8%	8,894	0.69	4	0.95	8.40%	1,672	0.711	C	0.004	No
I-15	Old Highway 395 to Gopher Canyon Road	111,160	8.1%	8,977	0.67	4	0.95	8.40%	1,644	0.700	C	0.007	No
I-15	Gopher Canyon Road to Deer Springs Road	118,560	8.1%	9,575	0.67	4	0.95	13.20%	1,794	0.763	C	0.010	No
I-15	Deer Springs Road to Centre City Parkway	118,260	8.0%	9,501	0.66	4	0.95	13.20%	1,771	0.754	C	0.008	No
I-15	Centre City Parkway to El Norte Parkway	112,000	8.0%	8,998	0.66	4	0.95	13.20%	1,677	0.714	C	0.006	No
I-15	El Norte Parkway to SR-78	127,930	7.9%	10,069	0.66	4	0.95	10.00%	1,850	0.787	C	0.006	No
I-15	SR-78 to W Valley Parkway	192,680	8.1%	15,681	0.60	5+2ML	0.95	10.00%	1,485	0.632	C	0.002	No
I-15	W Valley Parkway to Auto Parkway	179,580	8.1%	14,615	0.60	5+2ML	0.95	10.00%	1,384	0.589	B	0.002	No
I-15	Auto Parkway to W Citracado Parkway	172,560	7.8%	13,383	0.60	5+2ML	0.95	10.00%	1,260	0.536	B	0.002	No
I-15	W Citracado Parkway to Via Rancho Parkway	196,490	7.8%	15,239	0.60	5+2ML	0.95	7.00%	1,414	0.602	B	0.002	No
I-15	Via Rancho Parkway to Bernardo Drive	198,460	7.4%	14,606	0.58	5+2ML	0.95	7.00%	1,315	0.560	B	0.001	No

**TABLE 5.10
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS**

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Bernardo Drive to Rancho Bernardo Road	201,430	7.4%	14,825	0.58	5+2ML	0.95	7.00%	1,335	0.568	B	0.001	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,400	7.3%	15,374	0.54	5+2ML	0.95	7.00%	1,282	0.546	B	0.001	No
I-15	Bernardo Center Drive to Camino Del Norte	214,380	7.3%	15,740	0.54	5+2ML	0.95	7.00%	1,313	0.559	B	0.001	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

TABLE 5.11
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,519	>1500: (Over Capacity)
	PM	1,274	1200-1500: (At Capacity)
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,204	1200-1500: (At Capacity)
	PM	1,372	1200-1500: (At Capacity)
SR-76 / Old Highway 395	AM	1,022	<1200: (Under Capacity)
	PM	1,070	<1200: (Under Capacity)

Source: Chen Ryan Associates; January 2013

5.2.3 Existing Plus Project (Phase B) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase B) conditions.

Roadway Segments

None of the study area roadway segments would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase B) conditions.

Intersections

Phase B of the project traffic would have direct impacts on two (2) of the study area intersections, including *I-15 SB Ramps / Gopher Canyon Road* and *I-15 NB Ramps / Gopher Canyon Road*. The following improvements would be required to mitigate the identified traffic impacts:

- I-15 SB Ramps / Gopher Canyon Road*** (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for either implementing the mitigation measure identified above or making a fair share contribution in which the improvement is a part of an approved Plan or Program. The signal warrant worksheet for this intersection is provided in **Appendix M**. A number of potential improvements such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigate the identified project impact at this location. Calculation worksheets for the various improvement analyses are included in **Appendix N**.

-
- *I-15 NB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The project applicant would be responsible for either implementing the mitigation measure identified above or making a fair share contribution in which the improvement is a part of an approved Plan or Program. The signal warrant worksheet for this intersection is provided in Appendix M. A number of potential improvements such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigate the identified project impact at this location. Calculation worksheets for the various improvement analyses are included in Appendix N.

Table 5.12 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Phase B) conditions. Calculation worksheets for the intersection analysis are provided in Appendix N.

TABLE 5.12
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	After Mitigation				Before Mitigation	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
14. I-15 SB Ramps / Gopher Canyon Road	5.4	A	6.1	A	470.3 / 173.0	F / F
15. I-15 NB Ramps / Gopher Canyon Road	4.6	A	6.4	A	31.8 / 1970.9	D / F

Source: Chen Ryan Associates; May 2013

Note: Bold letter indicates unacceptable LOS E or F.

As shown in the table, after installation of the proposed traffic signals, all three impacted intersections would operate at acceptable LOS A during both the AM and PM peak hours.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase B) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase B) conditions.

Table 5.13 summarizes potential impacts and recommended mitigation measures associated with Phase B of the Lilac Hills Ranch project.

**TABLE 5.13
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE B) CONDITIONS**

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Roadway Segment</i>		
None	-	-
<i>Intersection</i>		
I-15 SB Ramps / Gopher Canyon Road	Signalization by the 1 st EDU of Phase 4 or 363 rd total EDU	-
I-15 NB Ramps / Gopher Canyon Road	Signalization by the 1 st EDU of Phase 4 or 363 rd total EDU	
<i>Two-Lane Highway</i>		
None	-	-
<i>Freeway</i>		
None	-	-

Source: Chen Ryan Associates; May 2013

5.3 Existing Plus Project (Phase C) Conditions

5.3.1 Existing Plus Project (Phase C) Roadway Network and Traffic Volumes

The Existing Plus Project (Phase C) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase C. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street “C”;
- Main Street, between Street “C” and Street “Z”;
- Main Street, between Street “Z” and W. Lilac Road;
- Street “C” and Street “Z”;
- Birdsong Drive, between Street “Z” and W. Lilac Road;
- Covey Lane, west of W. Lilac Road;
- Intersection # 26, Street “O” / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street “C” – proposed roundabout;
- Intersection #28, Lilac Hills Ranch Road / Main Street North – proposed all-way stop controlled intersection;
- Intersection #29, Lilac Hills Ranch Road / Main Street South – proposed all-way stop controlled intersection;

- Intersection # 30, Street “Z” / Main Street – proposed one-way stop (southbound Street “Z” approach) controlled T-intersection; and
- Intersection # 31, Street “Z” / Main Street – proposed roundabout.

In addition to the project access and frontage roads assumed above, mitigation measures from Phase B were also carried forward into this Phase. These improvements include:

- I-15 SB Ramps / Gopher Canyon Road intersection – signalized; and
- I-15 NB Ramps / Gopher Canyon Road intersection – signalized.

5.3.2 Existing Plus Project (Phase C) Traffic Conditions

Level of service analyses under Existing Plus Project (Phase C) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below.

Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-3A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-3B**.

Roadway Segment Analysis

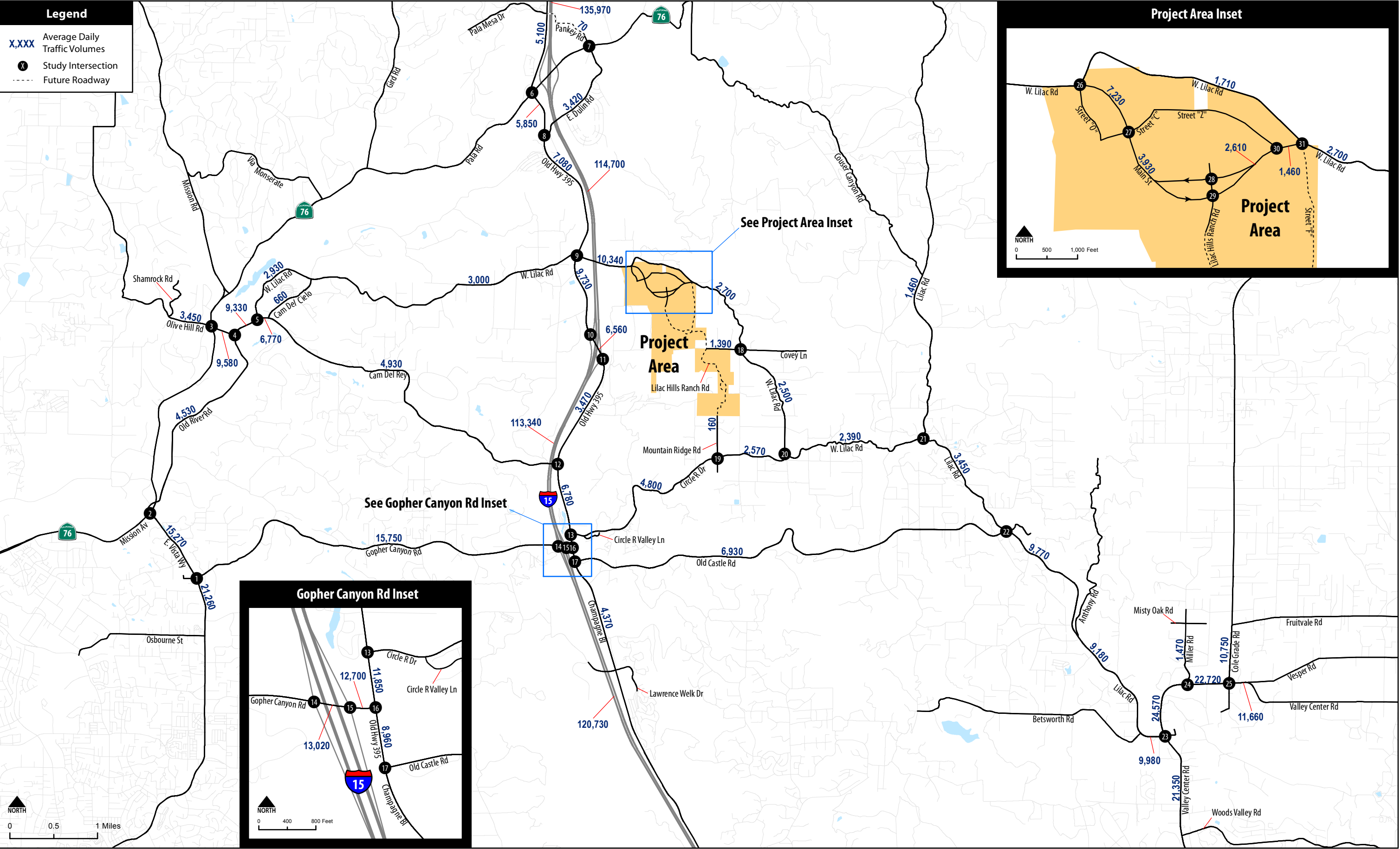
Table 5.14 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase C) conditions. As shown, the following four (4) roadway segments would operate at substandard LOS E or F:

- W. Lilac Road, between Old Highway 395 and Main Street – LOS F;
- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS E;
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E; and
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would not result in a direct impact to study roadway segment of E. Vista Way, between SR-76 and Gopher Canyon Road since it would not add 200 or more daily trips this road. However, Phase C of the project traffic would result in direct impact (County planning level assessment) at the other three (3) segments, including: W. Lilac Road, between Old Highway 395 and Main Street; Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps; and E. Vista Way, between Gopher Canyon Road and Osborne Street.

Intersection Analysis

Table 5.15 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase C) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase C) conditions are provided in **Appendix O**.

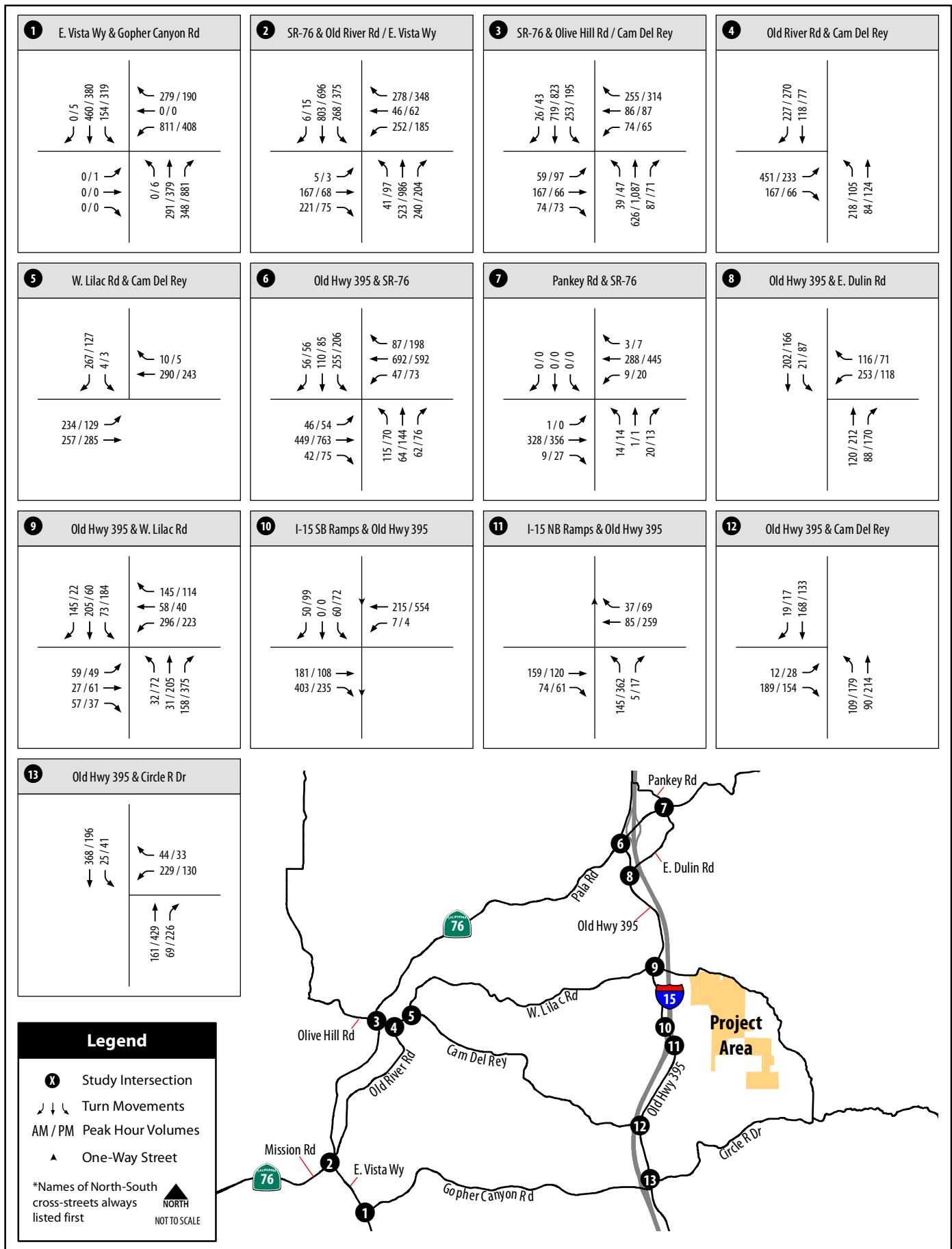


Lilac Hills Ranch Traffic Impact Study

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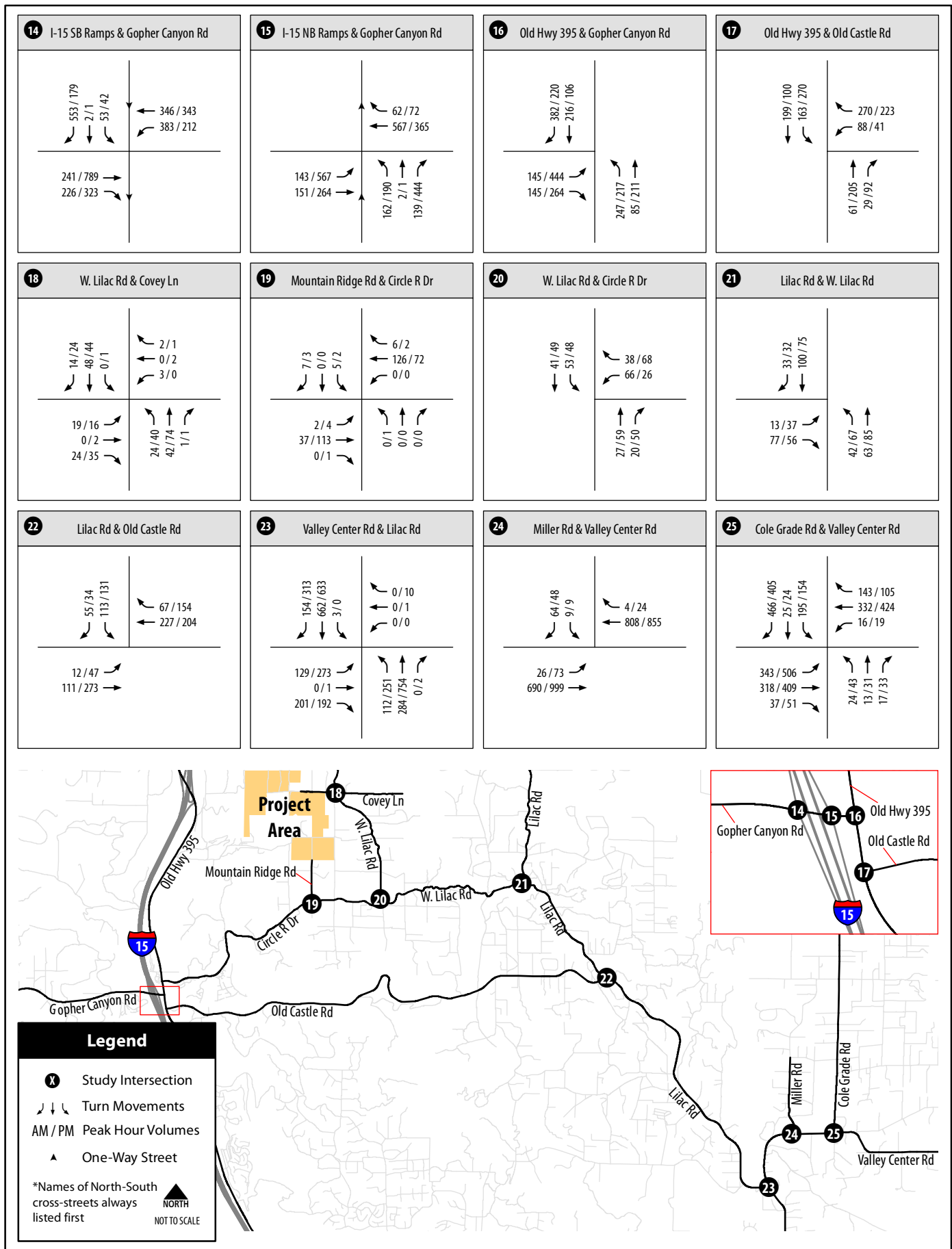
Figure 5-3A

Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase C) Conditions



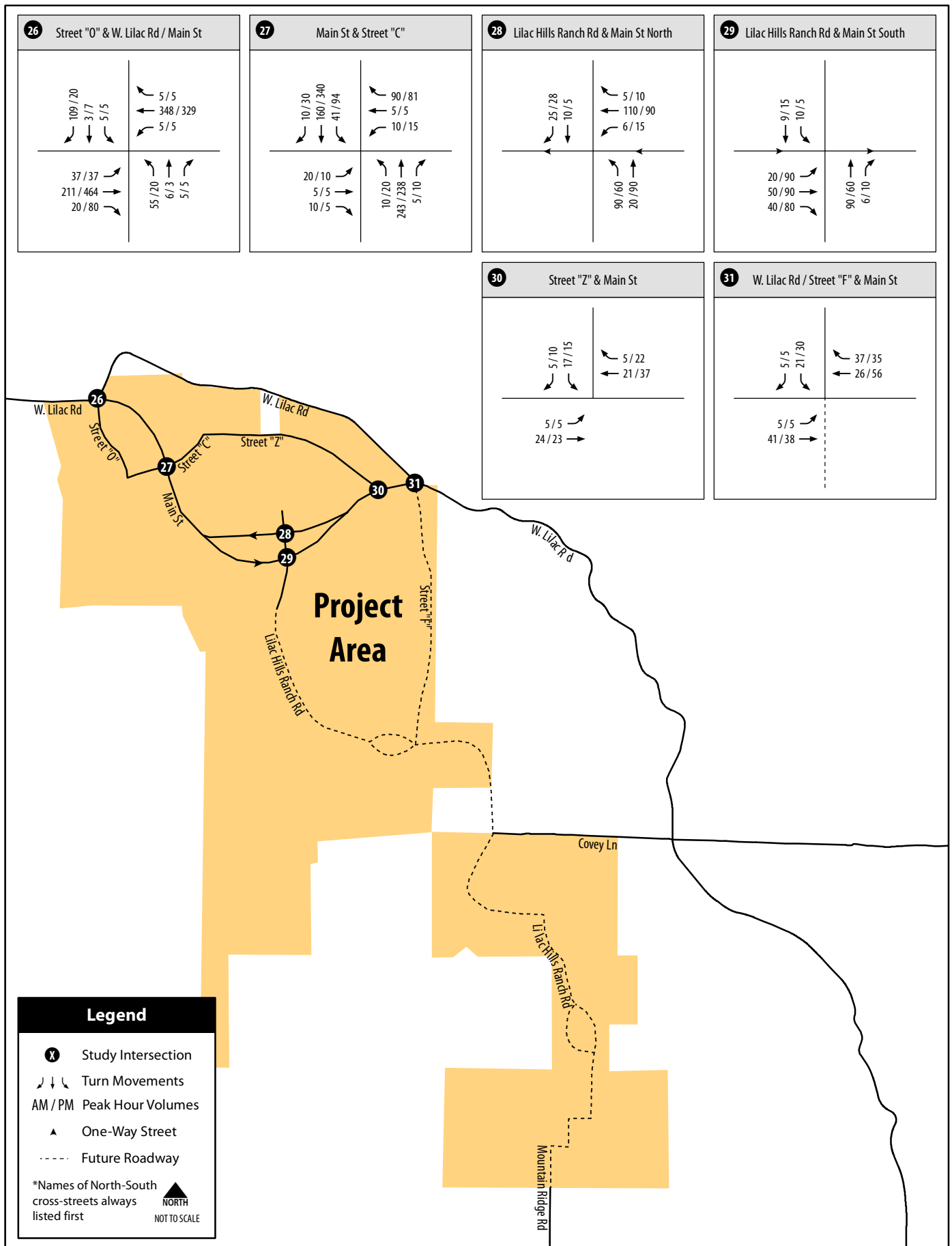
Lilac Hills Ranch Traffic Impact Study

Figure 5-3B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase C) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-3B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase C) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-3B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase C) Conditions

TABLE 5.14
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Roadway	From	To	With Project Phase C				Existing		Project Phase C ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	10,900	3,420	B	1,830	A	1,600	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	8,700	2,930	A	2,270	A	670	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	8,700	3,000	A	2,140	A	860	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	10,340	F	1,150	A	9,190	Yes > 100ADT
W. Lilac Road	Main Street	Street "F"	2-Ln	8,700	1,710	A	1,150	A	560	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	8,700	2,700	A	1,150	A	1,550	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	8,700	2,500	A	480	A	2,020	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	8,700	2,390	A	1,170	A	1,220	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	660	A	630	A	30	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,450	A	3,380	A	70	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,580	D	9,350	D	230	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	10,900	9,330	D	8,640	D	690	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-Ln w/ SM	13,500	6,770	C	6,730	C	50	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	8,700	4,930	A	4,850	A	80	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	10,900	15,750	E	15,310	E	430	Yes > 200ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	13,020	A	12,390	A	630	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	12,700	A	11,870	A	830	No

TABLE 5.14
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Roadway	From	To	With Project Phase C				Existing		Project Phase C ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	10,900	4,800	C	4,030	B	770	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	10,900	2,570	B	1,770	A	800	No
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	10,900	6,930	C	6,840	C	90	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,270	E	15,120	E	160	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,260	F	21,020	F	240	Yes > 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	10,900	4,530	C	4,070	B	460	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	13,500	4,370	B	4,170	B	200	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	10,900	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	8,700	1,460	A	1,150	A	310	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	8,700	3,450	A	2,640	A	800	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,770	D	9,010	D	760	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	9,180	D	8,740	D	440	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	9,980	D	9,620	D	360	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,350	C	21,290	C	60	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,570	B	24,280	B	290	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,720	C	22,440	C	280	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,660	D	11,490	D	170	No

TABLE 5.14
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Roadway	From	To	With Project Phase C				Existing		Project Phase C ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	8,000	1,470	A	1,460	A	10	No
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,750	D	10,660	D	90	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

RM = Raised Median.

SM = Striped Median.

TWLTL = Two-Way Left-Turn Lane.

TABLE 5.15
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	Traffic Control	With Project Phase C				Existing		Change in Delay (sec.) AM / PM	Phase C Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	29.0	C	51.0	D	24.3 / 48.7	C / D	4.7 / 2.3	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	74.7	E	53.1	D	73.9 / 52.3	E / D	<u>0.8</u> / 0.8	-	No Caltrans Int. < 2 sec.

TABLE 5.15
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	Traffic Control	With Project Phase C				Existing		Change in Delay (sec.) AM / PM	Phase C Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	44.9	D	62.0	E	43.6 / 60.8	D / E	1.3 / <u>1.2</u>	-	No Caltrans Int. < 2 sec.
4. Old River Road / Camino Del Rey	OWSC	24.1	D	12.3	B	23.2 / 12.2	D / B	0.9 / 0.1	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	17.0	C	11.3	B	15.4 / 11.0	C / B	1.6 / 0.3	-	No
6. Old Highway 395 / SR-76	Signal	43.9	D	47.0	D	43.0 / 42.2	D / D	0.9 / 4.8	-	No
7. Pankey Road / SR-76	TWSC	14.1	B	19.3	C	12.5 / 15.2	B / C	1.6 / 4.1	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	17.9	C	19.5	D	14.6 / 11.2	B / B	3.3 / 8.3	-	No
9. Old Highway 395 / W. Lilac Road	TWSC	174.8	F	662.1	F	18.5 / 13.3	C / B	156.3 / 648.8	AM: WBL +260 PM: WBL +207	Yes County Int. > 5 trips
10. I-15 SB Ramps / Old Highway 395	OWSC	11.5	B	13.4	B	10.6 / 12.1	B / B	0.9 / 1.3	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	11.2	B	18.9	C	9.9 / 11.2	A / B	1.3 / 7.7	-	No
12. Old Highway 395 / Camino Del Rey	OWSC	10.4	B	11.8	B	10.1 / 11.0	B / B	0.3 / 0.8	-	No
13. Old Highway 395 / Circle R Drive	OWSC	26.8	D	33.2	D	20.4 / 22.5	C / C	6.4 / 8.7	-	No

TABLE 5.15
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	Traffic Control	With Project Phase C				Existing		Change in Delay (sec.) AM / PM	Phase C Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
14. I-15 SB Ramps / Gopher Canyon Road*	Signal	5.4	A	6.1	A	468.2 / 173.0	F / F	-462.8 / -166.9	-	No
15. I-15 NB Ramps / Gopher Canyon Road*	Signal	4.7	A	6.4	A	30.5 / 1945.4	D / F	-25.8 / -1939.0	-	No
16. Old Highway 395 / Gopher Canyon Road	Signal	17.6	B	12.9	B	16.1 / 8.8	B / A	1.5 / 4.1	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.8	B	16.2	B	13.9 / 15.7	B / B	0.0 / 0.5	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.7	A	10.3	B	8.8 / 9.1	B / A	0.9 / 1.2	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.5	A	10.1	B	9.3 / 9.6	A / A	0.2 / 0.5	-	No
20. W. Lilac Road / Circle R Drive	OWSC	10.4	B	9.9	B	9.3 / 9.3	A / A	1.1 / 0.6	-	No
21. Lilac Road / W. Lilac Road	OWSC	10.1	B	10.7	B	9.6 / 9.9	A / A	0.5 / 0.8	-	No
22. Lilac Road / Old Castle Road	OWSC	12.9	B	21.2	C	11.8 / 17.8	B / C	1.1 / 3.4	-	No
23. Valley Center Rd / Lilac Road	Signal	10.8	B	27.5	C	10.5 / 22.6	B / C	0.3 / 4.9	-	No
24. Miller Road / Valley Center Road	OWSC	17.1	C	25.9	D	16.9 / 25.2	C / D	0.2 / 0.7	-	No
25. Cole Grade Road / Valley Center Road	Signal	31.6	C	35.1	C	31.1 / 34.9	C / C	0.5 / 0.2	-	No

TABLE 5.15
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	Traffic Control	With Project Phase C				Existing		Change in Delay (sec.) AM / PM	Phase C Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
26. Street "O" / W. Lilac Road/Main Street	RA	6.9	A	9.0	A	DNE	DNE	6.9 / 9.0	-	No
27. Main Street / Street "C"	RA	5.7	A	7.6	A	DNE	DNE	5.7 / 7.6	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.0	A	8.4	A	DNE	DNE	8.0 / 8.4	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	7.6	A	8.9	A	DNE	DNE	7.6 / 8.9	-	No
30. Street "Z" / Main Street	OWSC	8.8	A	8.9	A	DNE	DNE	8.8 / 8.9	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.7	A	3.9	A	DNE	DNE	3.7 / 3.9	-	No

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

AWSC = All-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

OWSC = One-Way Stop Controlled.

RA = Roundabout.

DNE = Does Not Exist.

For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

*Traffic signal was required as a mitigation measure in Phase B of the project and was assumed to be carried forward into Phases C, D, & E.

As shown in the table, the following three (3) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase C) conditions:

- SR-76 / Old River Road/E. Vista Way (Caltrans) – LOS E during the AM peak hour, and the Phase C project traffic would not add two seconds or more of additional delay to this intersection.
- SR-76 / Olive Hill Road/Camino Del Rey (Caltrans) – LOS E during the PM peak hour, and the Phase C project traffic would not add two seconds or more of additional delay to this intersection.
- Old Highway 395 / W. Lilac Road (County) – LOS F during both the AM and PM peak hours, and the Phase C project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would have a direct impact at the intersection of Old Highway 395 / W. Lilac Road.

Two-Lane Highway Analysis

Table 5.16 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase C) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase C) conditions and the additional traffic generated by Phase C of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.17** displays the resulting level of service for I-15 under Existing Plus Project (Phase C) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase C) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the project would not cause any direct impacts to study area freeway segments.

TABLE 5.16
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

2-Ln Highway	From	To	With Project Phase C			Existing		Project Phase C ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	5,100	D or better	4,770	D or better	330	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,850	D or better	4,720	D or better	1,130	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	7,080	D or better	4,340	D or better	2,740	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	9,730	D or better	4,450	D or better	5,280	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	6,560	D or better	3,600	D or better	2,960	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	3,470	D or better	2,430	D or better	1,040	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	6,780	D or better	5,820	D or better	960	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	11,850	D or better	10,710	D or better	1,140	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	8,960	D or better	8,660	D or better	290	No

Source: Chen Ryan Associates; January 2013

TABLE 5.17
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	135,900	8.4%	11,481	0.64	4	0.95	6.75%	1,985	0.844	D	0.012	No
I-15	Old Highway 395 to SR-76	135,970	7.4%	10,115	0.73	4	0.95	6.75%	2,013	0.856	D	0.012	No
I-15	SR-76 to Old Highway 395	114,700	7.8%	8,972	0.69	4	0.95	8.40%	1,686	0.718	C	0.011	No
I-15	Old Highway 395 to Gopher Canyon Road	113,340	8.1%	9,153	0.67	4	0.95	8.40%	1,676	0.713	C	0.021	No
I-15	Gopher Canyon Road to Deer Springs Road	120,730	8.1%	9,750	0.67	4	0.95	13.20%	1,827	0.777	C	0.024	No
I-15	Deer Springs Road to Centre City Parkway	120,030	8.0%	9,643	0.66	4	0.95	13.20%	1,797	0.765	C	0.019	No
I-15	Centre City Parkway to El Norte Parkway	113,400	8.0%	9,111	0.66	4	0.95	13.20%	1,698	0.723	C	0.015	No
I-15	El Norte Parkway to SR-78	129,220	7.9%	10,171	0.66	4	0.95	10.00%	1,868	0.795	C	0.014	No
I-15	SR-78 to W Valley Parkway	193,640	8.1%	15,759	0.60	5+2ML	0.95	10.00%	1,493	0.635	C	0.005	No
I-15	W Valley Parkway to Auto Parkway	180,380	8.1%	14,680	0.60	5+2ML	0.95	10.00%	1,390	0.592	B	0.005	No
I-15	Auto Parkway to W Citracado Parkway	173,340	7.8%	13,444	0.60	5+2ML	0.95	10.00%	1,266	0.539	B	0.004	No

TABLE 5.17
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	197,180	7.8%	15,293	0.60	5+2ML	0.95	7.00%	1,419	0.604	B	0.004	No
I-15	Via Rancho Parkway to Bernardo Drive	199,100	7.4%	14,653	0.58	5+2ML	0.95	7.00%	1,319	0.561	B	0.003	No
I-15	Bernardo Drive to Rancho Bernardo Road	202,030	7.4%	14,869	0.58	5+2ML	0.95	7.00%	1,339	0.570	B	0.003	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,970	7.3%	15,416	0.54	5+2ML	0.95	7.00%	1,286	0.547	B	0.003	No
I-15	Bernardo Center Drive to Camino Del Norte	214,920	7.3%	15,779	0.54	5+2ML	0.95	7.00%	1,316	0.560	B	0.002	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase C) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.18** and analysis worksheets for the Existing Plus Project (Phase C) conditions are provided in **Appendix P**.

TABLE 5.18
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,541	>1500: (Over Capacity)
	PM	1,302	1200-1500: (At Capacity)
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,207	1200-1500: (At Capacity)
	PM	1,376	1200-1500: (At Capacity)
SR-76 / Old Highway 395	AM	1,055	<1200: (Under Capacity)
	PM	1,129	<1200: (Under Capacity)

Source: Chen Ryan Associates; January 2013

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase C) conditions.

5.3.3 Existing Plus Project (Phase C) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase C) conditions.

Roadway Segments

Based on the County planning level impact criteria, Phase C of the project traffic would result in direct impacts at three (3) of the study area roadway segments. The following improvements would be required to mitigate the identified impact:

- W. Lilac Road, between Old Highway 395 and Main Street – This road provides primary access to the project site, and it is recommended to improve this facility to the General Plan Mobility Element classification of 2.2C by 929 EDU (or project daily trips of 9,298). The project applicant would be responsible for either implementing the mitigation measure identified above or making a fair share contribution in which the improvement is a part of an approved Plan or Program. This significantly impacted roadway segment would operate at LOS D with the roadway widening.

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – The project would add 430 daily trips (approximately 2.7% of the total ADT) to this roadway which is approximately 7 miles away from the project site.
- E. Vista Way, between Gopher Canyon Road and Osborne Street – The project would add 240 daily trips (approximately 1.1% of the total ADT) to this roadway which is approximately 9 miles away from the project site.

Given the rural community character where Gopher Canyon Road and E. Vista Way are located and the minimal interruption to traffic flows, a more detailed arterial analysis was conducted. In this case, it was important to consider how performance of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour traffic.

Highway Capacity Software (HCS) 2000 developed by McTrans was employed for the arterial analysis. The HCS arterial analysis methodology is based upon Chapter 15 (Urban Street) and Chapter 20 (2-Lane Highway) of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to the roadway functional classification. E. Vista Way, between Gopher Canyon Road and Osborne Street was evaluated as a Class I arterial with a free-flow speed (FFS) of 50 mph since traffic signals along this facility are located less than one mile apart; while Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps was analyzed as a Class II 2-lane highway given the fact that traffic signals are located at more than two-mile apart (> 4 miles).

Table 5.19 displays the measure criteria (arterial travel speed or percent time spent following) and level of service, and the respective analysis worksheet is included in **Appendix Q**. Level of service criteria for both Class I arterial and Class II 2-lane highway are also included in Appendix Q.

TABLE 5.19
ARTERIAL LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Arterial	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
		Criteria	LOS	Criteria	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	50	78.8% PTSF	D	76.5% PTSF	D
E. Vista Way, between Gopher Canyon Road and Osborne Street	50	24.2 mph	D	22.1 mph	D

Source: Chen Ryan Associates; May 2013

Note: PTSF = Percent time-spent-following.

As shown in the table above, both segments would operate at acceptable LOS D or better under Existing Plus Project (Phase C) conditions based on the arterial analysis. Therefore, it is appropriate to consider that no mitigation measures would be necessary at these locations.

Intersections

Phase C of the project traffic would have a direct impact on the study area intersection of *Old Highway 395 / W. Lilac Road*. The following intersection improvement would be required to mitigate the identified traffic impact:

- *Old Highway 395 / W. Lilac Road* (two-way stop controlled) (County) – Signalization would be required (by 585th EDU or 585 PM peak hour project trips since PM intersection operations would dictate the need for signalization) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The project applicant would be responsible for either implementing the mitigation measure identified above or making a fair share contribution in which the improvement is a part of an approved Plan or Program. The signal warrant worksheet for this intersection is provided in **Appendix R**.

Table 5.20 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Phase C) conditions. Calculation worksheets for the intersection analysis are provided in **Appendix S**.

TABLE 5.20
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	After Mitigation				Before Mitigation	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
9. Old Highway 395 / W. Lilac Road	32.7	C	32.0	C	174.8 / 662.1	F / F

Source: Chen Ryan Associates; January 2013

Note: Bold letter indicates unacceptable LOS E or F.

As shown in the table, after installation of the proposed traffic signal, the impacted intersection would operate at acceptable LOS C or better during both the AM and PM peak hours.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase C) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase C) conditions.

Table 5.21 summarizes potential impacts and recommended mitigation measures associated with Phase C of the Lilac Hills Ranch project.

**TABLE 5.21
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE C) CONDITIONS**

Potentially Impacted Facility	Mitigation Measures	
	Recommendations	Rationale
<i>Roadway Segment</i>		
W. Lilac Road, between Old Highway 395 and Main Street	Improve to 2.2C by 929 th EDU or 9,298 project ADT	Provide primary project access – County GP Mobility Element Designation
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	None	<ul style="list-style-type: none"> • Rural community character • Minimal project trips added • Distance from project site • Acceptable Percent Time Spent Following (Class II Two-Lane Highway criterion)
E. Vista Way, between Gopher Canyon Road and Osborne Street	None	<ul style="list-style-type: none"> • Rural community character • Minimal project trips added • Distance from project site • Acceptable arterial speed
<i>Intersection</i>		
Old Highway 395 / W. Lilac Road	Signalization by 585 th EDU or 585 PM peak hour project trips	-
<i>Two-Lane Highway</i>		
None	-	-
<i>Freeway</i>		
None	-	-

Source: Chen Ryan Associates; May 2013

5.4 Existing Plus Project (Phase D) Conditions

5.4.1 Existing Plus Project (Phase D) Roadway Network and Traffic Volumes

The Existing Plus Project (Phase D) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase D. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street “C”;
- Main Street, between Street “C” and Street “Z”;
- Main Street, between Street “Z” and W. Lilac Road;

-
- Street “C” and Street “Z”;
 - Birdsong Drive, between Street “Z” and W. Lilac Road;
 - Covey Lane, west of W. Lilac Road;
 - Lilac Hills Ranch Road, between Covey Lane and Mountain Ridge Road;
 - Intersection # 26, Street “O” / W. Lilac Road/Main Street – proposed roundabout;
 - Intersection # 27, Main Street / Street “C”– proposed roundabout;
 - Intersection #28, Lilac Hills Ranch Road / Main Street North – proposed all-way stop controlled intersection;
 - Intersection #29, Lilac Hills Ranch Road / Main Street South – proposed all-way stop controlled intersection;
 - Intersection # 30, Street “Z” / Main Street – proposed one-way stop (southbound Street “Z” approach) controlled T-intersection; and
 - Intersection # 31, Street “Z” / Main Street – proposed roundabout.

In addition to the project access and frontage roads assumed above, mitigation measures from Phases B and C were also carried forward into this Phase. These improvements include:

- W. Lilac Road, between Old Highway 395 and Main Street – 2.2C;
- Old Highway 395 / W. Lilac Road intersection – signalized;
- I-15 SB Ramps / Gopher Canyon Road intersection – signalized; and
- I-15 NB Ramps / Gopher Canyon Road intersection – signalized.

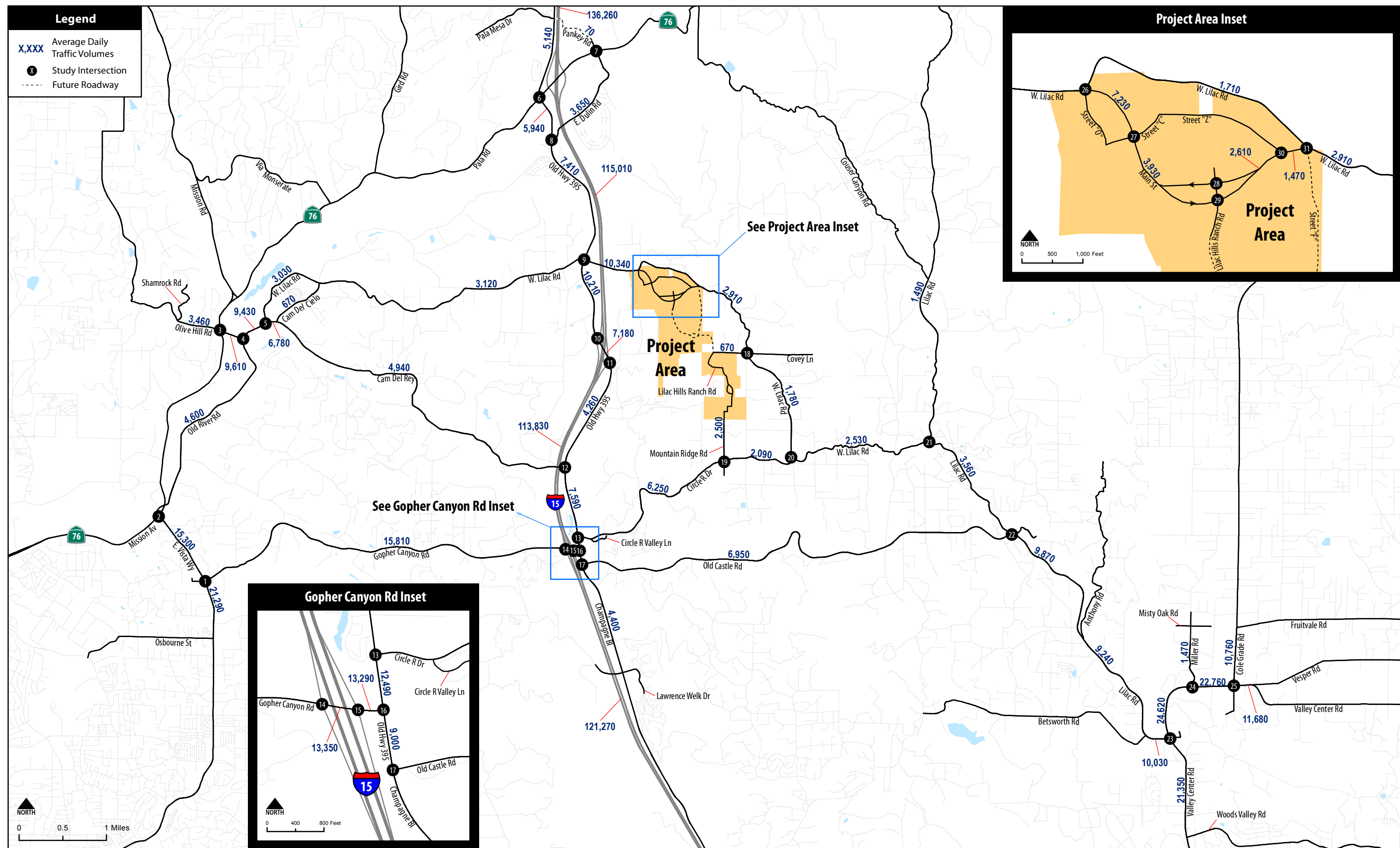
5.4.2 Existing Plus Project (Phase D) Traffic Conditions

Level of service analyses under Existing Plus Project (Phase D) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-4A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-4B**.

Roadway Segment Analysis

Table 5.22 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase D) conditions. As shown, the following three (3) roadway segments would operate at substandard LOS E or F:

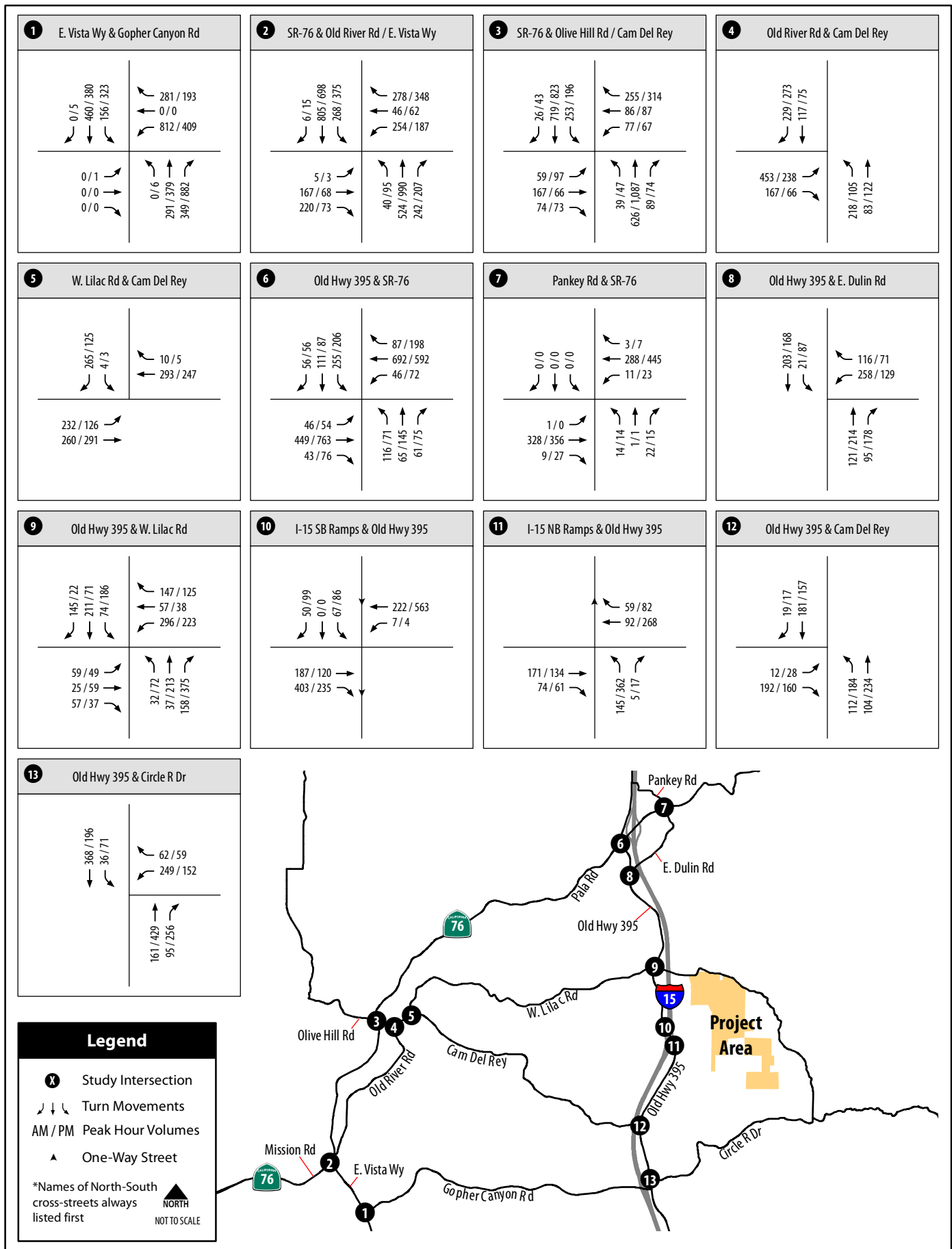
- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS E;
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E; and
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.



Lilac Hills Ranch Traffic Impact Study

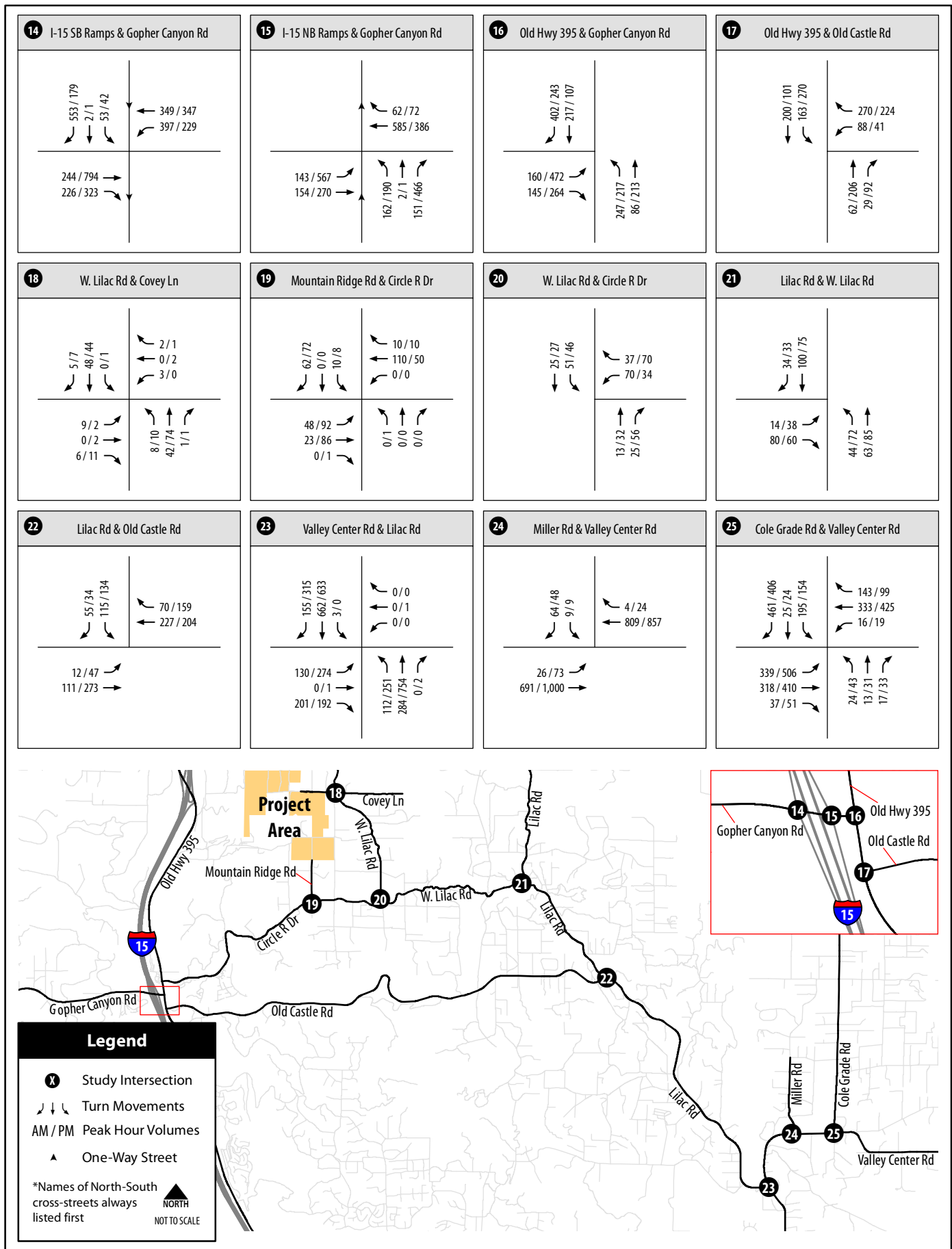
Figure 5-4A

**Roadway Average Daily Traffic Volumes -
Existing Plus Project (Phase D) Conditions**



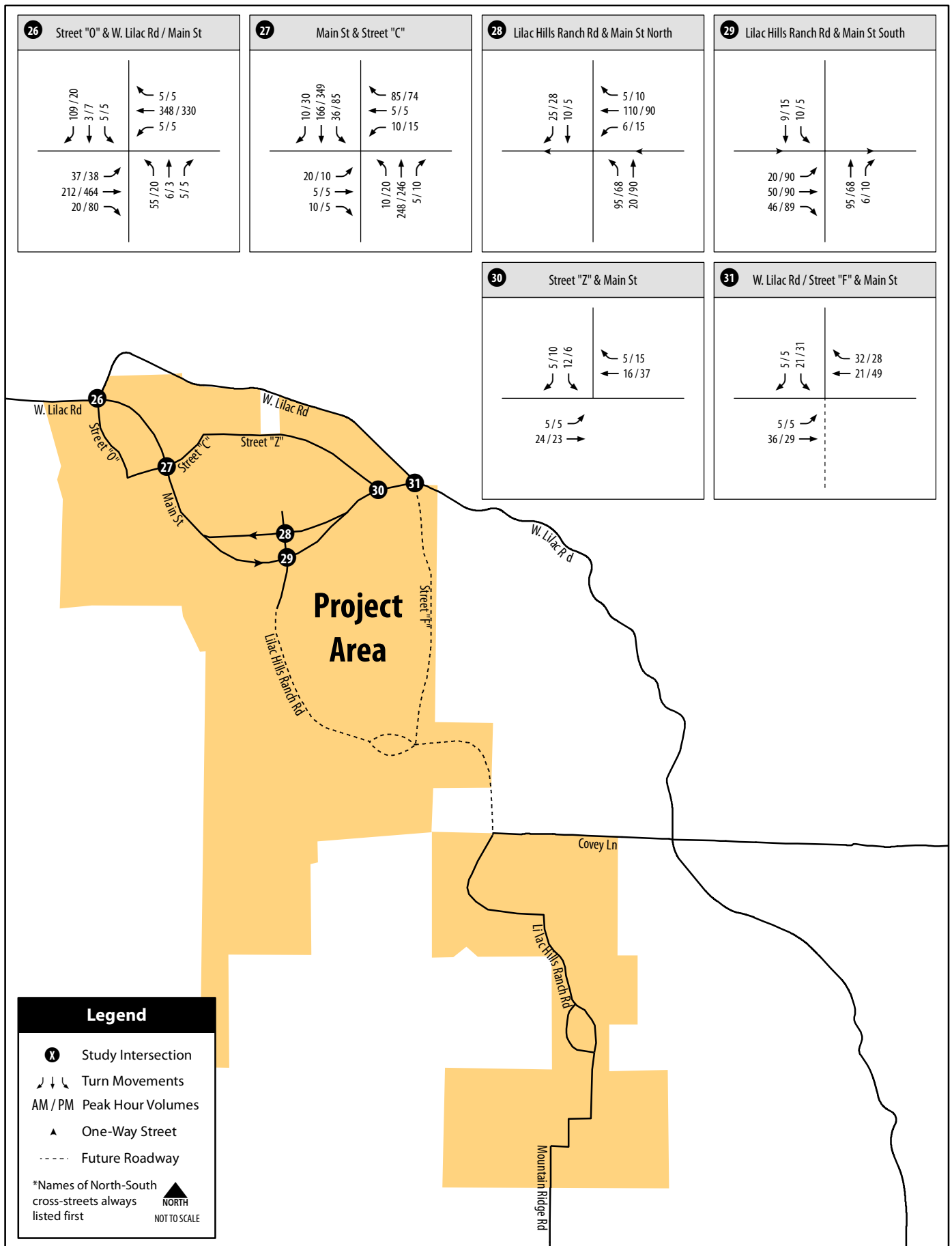
Lilac Hills Ranch Traffic Impact Study

Figure 5-4B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase D) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-4B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase D) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-4B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase D) Conditions

TABLE 5.22
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Roadway	From	To	With Project Phase D				Existing		Project Phase D ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	10,900	3,650	B	1,830	A	1,820	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	8,700	3,030	A	2,270	A	760	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	8,700	3,120	A	2,140	A	980	No
W. Lilac Road	Old Highway 395	Main Street	2.2C*	13,500	10,340	D	1,150	A	9,200	No
W. Lilac Road	Main Street	Street "F"	2-Ln	8,700	1,710	A	1,150	A	560	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	8,700	2,910	A	1,150	A	1,760	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	8,700	1,780	A	480	A	1,300	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	8,700	2,530	A	1,170	A	1,360	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	670	A	630	A	40	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,460	A	3,380	A	80	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,610	D	9,350	D	260	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	10,900	9,430	D	8,640	D	790	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-Ln w/ SM	13,500	6,780	C	6,730	C	50	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	8,700	4,940	A	4,850	A	90	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	10,900	15,810	E	15,310	E	490	Yes > 200ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	13,350	A	12,390	A	960	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	13,290	A	11,870	A	1,430	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	10,900	6,250	C	4,030	B	2,220	No

TABLE 5.22
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Roadway	From	To	With Project Phase D				Existing		Project Phase D ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	10,900	2,090	B	1,770	A	320	No
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	10,900	6,950	C	6,840	C	100	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,300	E	15,120	E	180	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,290	F	21,020	F	270	Yes > 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	10,900	4,600	C	4,070	B	530	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	13,500	4,400	B	4,170	B	230	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	10,900	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	8,700	1,490	A	1,150	A	340	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	8,700	3,560	A	2,640	A	920	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,870	D	9,010	D	870	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	9,240	D	8,740	D	500	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	10,030	D	9,620	D	410	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,350	C	21,290	C	60	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,620	B	24,280	B	340	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,760	C	22,440	C	320	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,680	D	11,490	D	190	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	8,000	1,470	A	1,460	A	10	No

TABLE 5.22
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Roadway	From	To	With Project Phase D				Existing		Project Phase D ADT	Direct Impact?
			Cross- Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,760	D	10,660	D	100	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

RM = Raised Median.

SM = Striped Median.

TWLTL = Two-Way Left-Turn Lane.

*W. Lilac Road, between Old Highway 395 and Main Street is to be improved to a 2.2C as a mitigation measure from previous phase (Phase C).

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the Lilac Hills Ranch project would not result in a direct impact to study roadway segment of E. Vista Way, between SR-76 and Gopher Canyon Road since it would not add 200 or more daily trips this road. However, Phase D of the project traffic would result in direct impact (County planning level assessment) at the other two (2) segments, including: Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps; and E. Vista Way, between Gopher Canyon Road and Osborne Street.

Intersection Analysis

Table 5.23 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase D) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase D) conditions are provided in **Appendix T**.

As shown in the table, the following three (3) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase D) conditions:

- SR-76 / Old River Road/E. Vista Way (Caltrans) – LOS E during the AM peak hour, and the Phase D project traffic would not add two seconds or more of additional delay to this intersection.
- SR-76 / Olive Hill Road/Camino Del Rey (Caltrans) – LOS E during the PM peak hour, and the Phase D project traffic would not add two seconds or more of additional delay to this intersection.
- Old Highway 395 / Circle R Drive (County) – LOS E during the AM peak hour / LOS F during the PM peak hour, and the Phase D project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the Lilac Hills Ranch project would have a direct impact at the intersection of Old Highway 395 / Circle R Drive.

Two-Lane Highway Analysis

Table 5.24 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase D) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase D) conditions and the additional traffic generated by Phase D of the project would not cause any direct impacts to Old Highway 395.

TABLE 5.23
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	Traffic Control	With Project Phase D				Existing			Phase D Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) AM / PM		
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	30.1	C	52.5	D	24.3 / 48.7	C / D	5.8 / 3.8	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	74.8	E	53.7	D	73.9 / 52.3	E / D	<u>0.9</u> / 1.4	-	No Caltrans Int. < 2 sec.
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	44.8	D	62.2	E	43.6 / 60.8	D / E	1.2 / <u>1.4</u>	-	No Caltrans Int. < 2 sec.
4. Old River Road / Camino Del Rey	OWSC	32.5	D	12.4	B	23.2 / 12.2	D / B	9.3 / 0.2	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	17.1	C	11.3	B	15.4 / 11.0	C / B	1.7 / 0.3	-	No
6. Old Highway 395 / SR-76	Signal	44.1	D	47.8	D	43.0 / 42.2	D / D	1.1 / 5.6	-	No
7. Pankey Road / SR-76	TWSC	14.1	B	19.0	C	12.5 / 15.2	B / C	1.6 / 3.8	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	18.5	C	21.2	C	14.6 / 11.2	B / B	3.9 / 10.0	-	No
9. Old Highway 395 / W. Lilac Road	Signal*	19.1	B	28.7	C	18.5 / 13.3	C / B	0.6 / 15.4	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	12.3	B	15.8	C	10.6 / 12.1	B / B	1.7 / 3.7	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	11.4	B	20.9	C	9.9 / 11.2	A / B	1.5 / 9.7	-	No

TABLE 5.23
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	Traffic Control	With Project Phase D				Existing			Phase D Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) AM / PM		
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
12. Old Highway 395 / Camino Del Rey	OWSC	10.5	B	12.2	B	10.1 / 11.0	B / B	0.4 / 1.2	-	No
13. Old Highway 395 / Circle R Drive	OWSC	39.0	E	62.7	F	20.4 / 22.5	C / C	18.6 / 40.2	AM: WBL +31 PM: WBL +38	Yes County Int. > 5 trips
14. I-15 SB Ramps / Gopher Canyon Road	Signal	5.9	A	6.5	A	468.2 / 173.0	F / F	-462.3 / -166.5	-	No
15. I-15 NB Ramps / Gopher Canyon Road	Signal	4.9	A	6.5	A	30.5 / 1945.4	D / F	-25.6 / -1938.9	-	No
16. Old Highway 395 / Gopher Canyon Road	Signal	17.6	B	13.8	B	16.1 / 8.8	B / A	1.5 / 5.0	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.8	B	16.6	B	13.9 / 15.7	B / B	0.0 / 0.9	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.4	A	9.7	A	8.8 / 9.1	B / A	0.6 / 0.6	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.7	A	13.1	B	9.3 / 9.6	A / A	0.4 / 3.5	-	No
20. W. Lilac Road / Circle R Drive	OWSC	10.2	B	10.4	A	9.3 / 9.3	A / A	0.9 / 1.1	-	No
21. Lilac Road / W. Lilac Road	OWSC	10.2	B	10.8	B	9.6 / 9.9	A / A	0.6 / 0.9	-	No
22. Lilac Road / Old Castle Road	OWSC	13.0	B	21.7	C	11.8 / 17.8	B / C	1.2 / 3.9	-	No
23. Valley Center Rd / Lilac Road	Signal	10.8	B	30.5	C	10.5 / 22.6	B / C	0.3 / 7.9	-	No

TABLE 5.23
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	Traffic Control	With Project Phase D				Existing			Phase D Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) AM / PM		
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
24. Miller Road / Valley Center Road	OWSC	17.2	C	26.3	D	16.9 / 25.2	C / D	0.3 / 1.1	-	No
25. Cole Grade Road / Valley Center Road	Signal	32.8	C	35.1	D	31.1 / 34.9	C / C	1.7 / 0.2	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	6.9	A	10.9	B	DNE	DNE	6.9 / 10.9	-	No
27. Main Street / Street "C"	RA	5.7	A	7.7	A	DNE	DNE	5.7 / 7.7	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.2	A	8.5	A	DNE	DNE	8.2 / 8.5	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	7.8	A	9.0	A	DNE	DNE	7.8 / 9.0	-	No
30. Street "Z" / Main Street	OWSC	8.8	A	8.9	A	DNE	DNE	8.8 / 8.9	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.7	A	3.8	A	DNE	DNE	3.7 / 3.8	-	No

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E of F.

AWSC = All-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

OWSC = One-Way Stop Controlled.

RA = Roundabout.

DNE = Does Not Exist.

For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

TABLE 5.24
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

2-Ln Highway	From	To	With Project Phase D			Existing		Project Phase D ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	5,140	D or better	4,770	D or better	380	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,940	D or better	4,720	D or better	1,230	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	7,410	D or better	4,340	D or better	3,060	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	10,210	D or better	4,450	D or better	5,770	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	7,180	D or better	3,600	D or better	3,580	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	4,260	D or better	2,430	D or better	1,830	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	7,590	D or better	5,820	D or better	1,770	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	12,490	D or better	10,710	D or better	1,790	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	9,000	D or better	8,660	D or better	340	No

Source: Chen Ryan Associates; January 2013

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.25** displays the resulting level of service for I-15 under Existing Plus Project (Phase D) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase D) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the project would not cause any direct impacts to study area freeway segments.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase D) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.26** and analysis worksheets for the Existing Plus Project (Phase D) conditions are provided in **Appendix U**.

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase D) conditions.

TABLE 5.25
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	136,180	8.4%	11,505	0.64	4	0.95	6.75%	1,989	0.846	D	0.014	No
I-15	Old Highway 395 to SR-76	136,260	7.4%	10,137	0.73	4	0.95	6.75%	2,017	0.858	D	0.014	No
I-15	SR-76 to Old Highway 395	115,010	7.8%	8,996	0.69	4	0.95	8.40%	1,691	0.720	C	0.013	No
I-15	Old Highway 395 to Gopher Canyon Road	113,830	8.1%	9,193	0.67	4	0.95	8.40%	1,683	0.716	C	0.024	No
I-15	Gopher Canyon Road to Deer Springs Road	121,270	8.1%	9,794	0.67	4	0.95	13.20%	1,835	0.781	C	0.027	No
I-15	Deer Springs Road to Centre City Parkway	120,460	8.0%	9,678	0.66	4	0.95	13.20%	1,804	0.768	C	0.022	No
I-15	Centre City Parkway to El Norte Parkway	113,740	8.0%	9,138	0.66	4	0.95	13.20%	1,703	0.725	C	0.017	No
I-15	El Norte Parkway to SR-78	129,540	7.9%	10,196	0.66	4	0.95	10.00%	1,873	0.797	C	0.016	No
I-15	SR-78 to W Valley Parkway	193,880	8.1%	15,779	0.60	5+2ML	0.95	10.00%	1,495	0.636	C	0.006	No
I-15	W Valley Parkway to Auto Parkway	180,580	8.1%	14,696	0.60	5+2ML	0.95	10.00%	1,392	0.592	B	0.005	No
I-15	Auto Parkway to W Citracado Parkway	173,540	7.8%	13,459	0.60	5+2ML	0.95	10.00%	1,267	0.539	B	0.005	No

**TABLE 5.25
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS**

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	197,360	7.8%	15,307	0.60	5+2ML	0.95	7.00%	1,421	0.604	B	0.004	No
I-15	Via Rancho Parkway to Bernardo Drive	199,260	7.4%	14,665	0.58	5+2ML	0.95	7.00%	1,320	0.562	B	0.004	No
I-15	Bernardo Drive to Rancho Bernardo Road	202,180	7.4%	14,880	0.58	5+2ML	0.95	7.00%	1,340	0.570	B	0.003	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	210,100	7.3%	15,425	0.54	5+2ML	0.95	7.00%	1,287	0.548	B	0.003	No
I-15	Bernardo Center Drive to Camino Del Norte	215,050	7.3%	15,789	0.54	5+2ML	0.95	7.00%	1,317	0.560	B	0.003	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

TABLE 5.26
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,549	>1500: (Over Capacity)
	PM	1,300	1200-1500: (At Capacity)
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,207	1200-1500: (At Capacity)
	PM	1,377	1200-1500: (At Capacity)
SR-76 / Old Highway 395	AM	1,056	<1200: (Under Capacity)
	PM	1,132	<1200: (Under Capacity)

Source: Chen Ryan Associates; January 2013

5.4.3 Existing Plus Project (Phase D) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase D) conditions.

Roadway Segments

Based on the County planning level impact criteria, Phase D of the project traffic would result in direct impacts at two (2) of the study area roadway segments, including:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – The project would add 490 daily trips (approximately 3.1% of the total ADT) to this roadway which is approximately 7 miles away from the project site.
- E. Vista Way, between Gopher Canyon Road and Osborne Street – The project would add 270 daily trips (approximately 1.3% of the total ADT) to this roadway which is approximately 9 miles away from the project site.

Given the rural community character where Gopher Canyon Road and E. Vista Way are located and the minimal interruption to traffic flows, a more detailed arterial analysis was conducted. In this case, it was important to consider how performance of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour traffic.

Highway Capacity Software (HCS) 2000 developed by McTrans was employed for the arterial analysis. The HCS arterial analysis methodology is based upon Chapter 15 (Urban Street) and Chapter 20 (2-Lane Highway) of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to the roadway functional classification. E. Vista Way, between Gopher Canyon Road and Osborne Street was evaluated as a Class I arterial with a free-flow speed (FFS) of 50 mph since traffic signals along this facility are located less than one mile apart; while Gopher Canyon Road, between E. Vista Way and I-15

SB Ramps was analyzed as a Class II 2-lane highway given the fact that traffic signals are located at more than two-mile apart (> 4 miles).

Table 5.27 displays the measure criteria (arterial travel speed or percent time spent following) and level of service, and the respective analysis worksheet is included in **Appendix V**.

TABLE 5.27
ARTERIAL LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Arterial	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
		Criteria	LOS	Criteria	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	50	78.9% PTSF	D	83.4% PTSF	D
E. Vista Way, between Gopher Canyon Road and Osborne Street	50	24.2 mph	D	22.0 mph	D

Source: Chen Ryan Associates; May 2013

Note: PTSF = Percent time-spent-following.

As shown in the table above, both segments would operate at acceptable LOS D or better under Existing Plus Project (Phase D) conditions based on the arterial analysis. Therefore, it is appropriate to consider that no mitigation measures would be necessary at these locations.

Intersections

Phase D of the project traffic would have direct impacts on three (3) of the study area intersections, including *Old Highway 395 / Circle R Drive*, *I-15 SB Ramps / Gopher Canyon Road*, and *I-15 NB Ramps / Gopher Canyon Road*. The following improvements would be required to mitigate the identified traffic impacts:

- *Old Highway 395 / Circle R Drive* (one-way stop controlled) (County) - Signalization would be required (by 121st EDU from combined Phases 4 and 5 or by 121 project (Phases 4 and 5) PM peak hour trips since PM peak hour intersection operation dictates the need for signalization) at this intersection to mitigate direct project impacts; or a 1,132 total EDU. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The project applicant would be responsible for either implementing the mitigation measure identified above or making a fair share contribution in which the improvement is a part of an approved Plan or Program. The signal warrant worksheet for this intersection is provided in **Appendix W**.

Table 5.28 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Phase D) conditions. Calculation worksheets for the intersection analysis are provided in **Appendix X**.

TABLE 5.28
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	After Mitigation				Before Mitigation	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
12. Old Highway 395 / Circle R Drive	4.7	A	4.8	A	39.0 / 62.7	E / F

Source: Chen Ryan Associates; May 2013

Note: Bold letter indicates unacceptable LOS E or F.

As shown in the table, after installation of the proposed traffic signals, the impacted intersection of Old Highway 395 / Circle R Drive would operate at acceptable LOS A during both the AM and PM peak hours.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase D) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase D) conditions.

Table 5.29 summarizes potential impacts and recommended mitigation measures associated with Phase D of the Lilac Hills Ranch project.

TABLE 5.29
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Roadway Segment</i>		
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	None	<ul style="list-style-type: none"> • Rural community character • Minimal project trips added • Distance from project site • Acceptable Percent Time Spent Following (Class II Two-Lane Highway criterion)
E. Vista Way, between Gopher Canyon Road and Osborne Street	None	<ul style="list-style-type: none"> • Rural community character • Minimal project trips added • Distance from project site • Acceptable arterial speed

TABLE 5.29
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Intersection</i>		
Old Highway 395 / Circle R Drive	Signalization by 121 st EDU from combined Phases 4 and 5 or by 121 project (Phases 4 and 5) PM peak hour trips; or 1,132 total EDU	-
<i>Two-Lane Highway</i>		
None	-	-
<i>Freeway</i>		
None	-	-

Source: Chen Ryan Associates; May 2013

5.5 Existing Plus Project (Phase E – Project Buildout) Conditions

5.5.1 Existing Plus Project (Buildout) Roadway Network and Traffic Volumes

The Existing Plus Project (Buildout) scenario includes existing traffic volumes with the addition of traffic generated by project buildout. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street “C”;
- Main Street, between Street “C” and Street “Z”;
- Main Street, between Street “Z” and W. Lilac Road;
- Street “C” and Street “Z”;
- Birdsong Drive, between Street “Z” and W. Lilac Road;
- Covey Lane, west of W. Lilac Road;
- Lilac Hills Ranch Road, north of Covey Lane;
- Lilac Hills Ranch Road, between Covey Lane and Mountain Ridge Road;
- Street “F”, between W. Lilac Road and Lilac Hills Ranch Road;
- Intersection # 26, Street “O” / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street “C” – proposed roundabout;
- Intersection #28, Lilac Hills Ranch Road / Main Street North – proposed all-way stop controlled intersection;
- Intersection #29, Lilac Hills Ranch Road / Main Street South – proposed all-way stop controlled intersection;

- Intersection # 30, Street “Z” / Main Street – proposed one-way stop (southbound Street “Z” approach) controlled T-intersection; and
- Intersection # 31, Street “Z” / Main Street – proposed roundabout.

In addition to the project access and frontage roads assumed above, mitigation measures from Phases B, C, and D were also carried forward into this Phase. These improvements include:

- W. Lilac Road, between Old Highway 395 and Main Street – 2.2C;
- Old Highway 395 / W. Lilac Road intersection – signalized;
- Old Highway 395 / Circle R Drive intersection – signalized;
- I-15 SB Ramps / Gopher Canyon Road intersection – signalized; and
- I-15 NB Ramps / Gopher Canyon Road intersection – signalized.

5.5.2 Existing Plus Project (Buildout) Traffic Conditions

Level of service analyses under Existing Plus Project (Buildout) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-5A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-5B**.

Roadway Segment Analysis

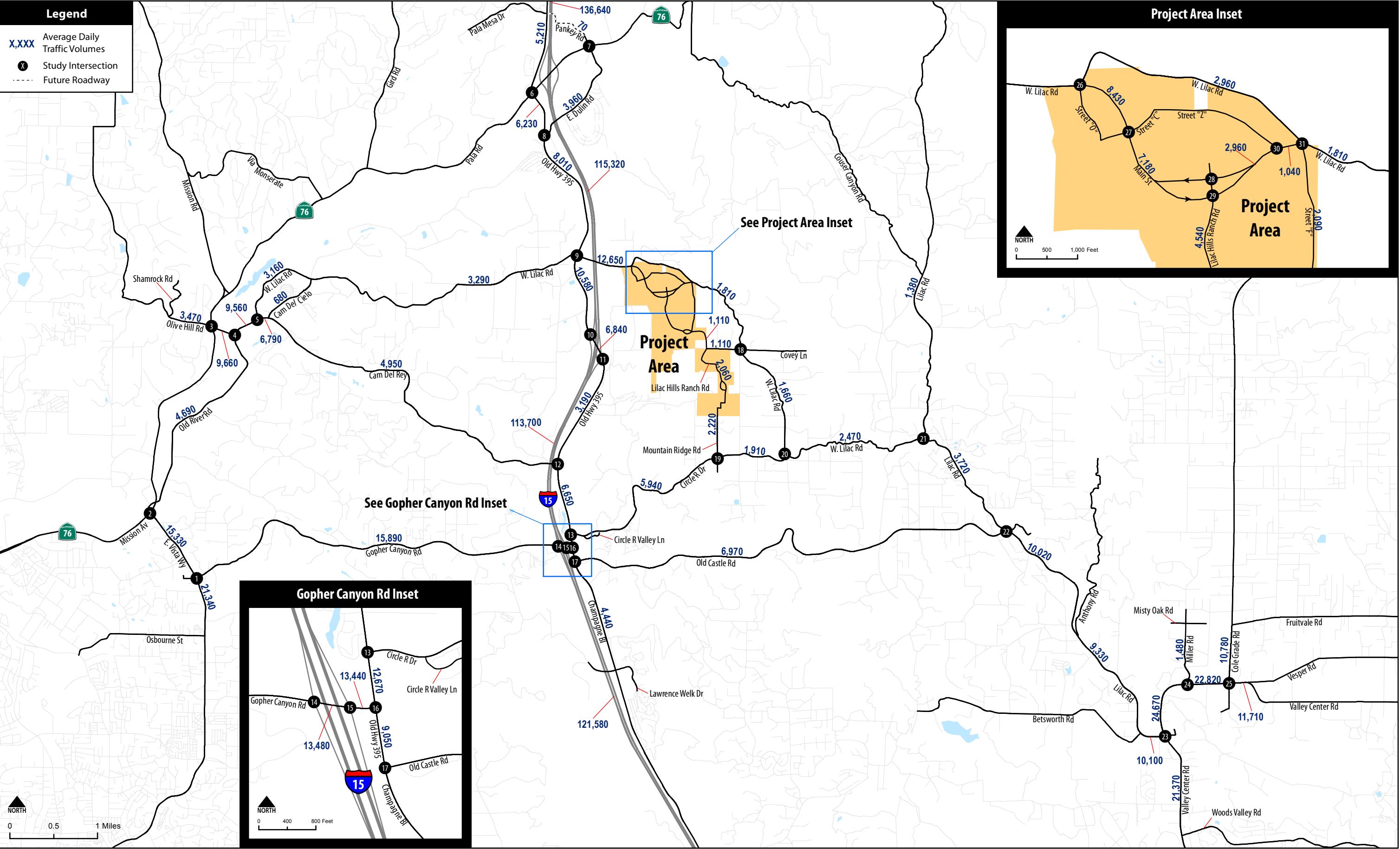
Table 5.30 displays the level of service analysis results for key roadway segments under Existing Plus Project (Buildout) conditions. As shown, the following three (3) roadway segments would operate at substandard LOS E or F:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS E;
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E; and
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the buildout of the Lilac Hills Ranch project would result in direct impacts all three (3) study roadway segments above.

Intersection Analysis

Table 5.31 displays intersection level of service and average vehicle delay results under Existing Plus Project (Buildout) conditions. Level of service calculation worksheets for the Existing Plus Project (Buildout) conditions are provided in **Appendix Y**.

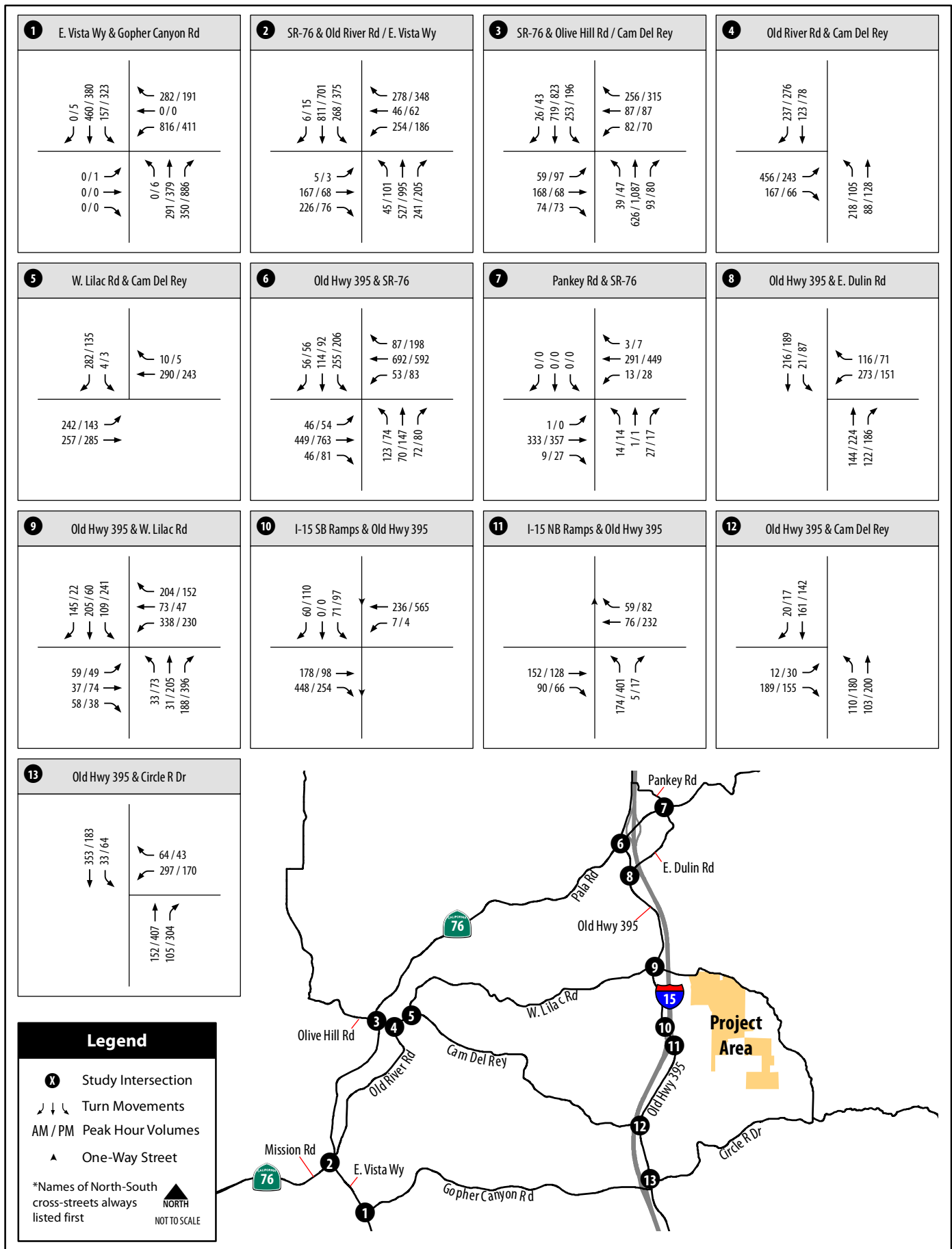


Lilac Hills Ranch Traffic Impact Study

CHEN✶RYAN

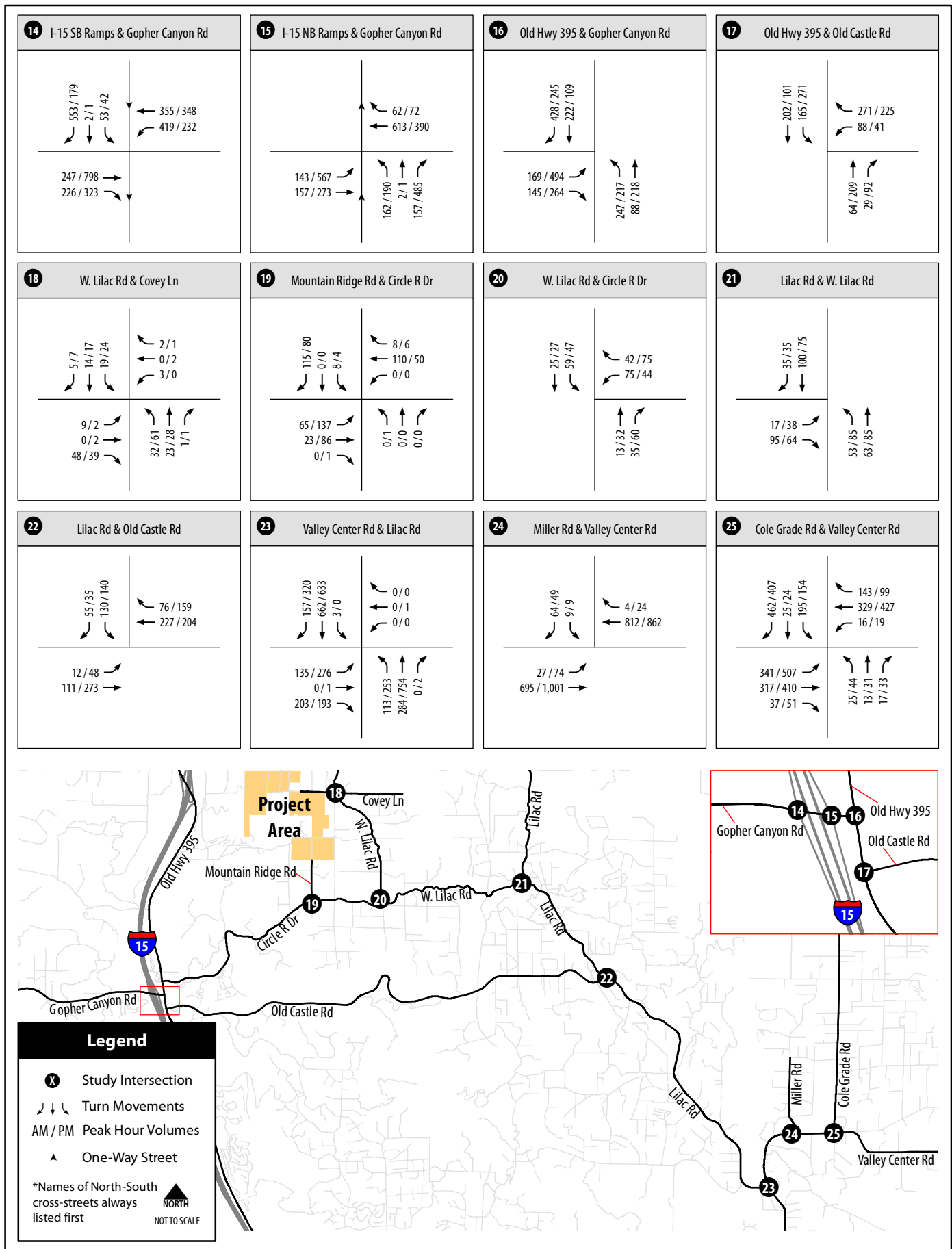
Figure 5-5A

Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase E, Buildout) Conditions



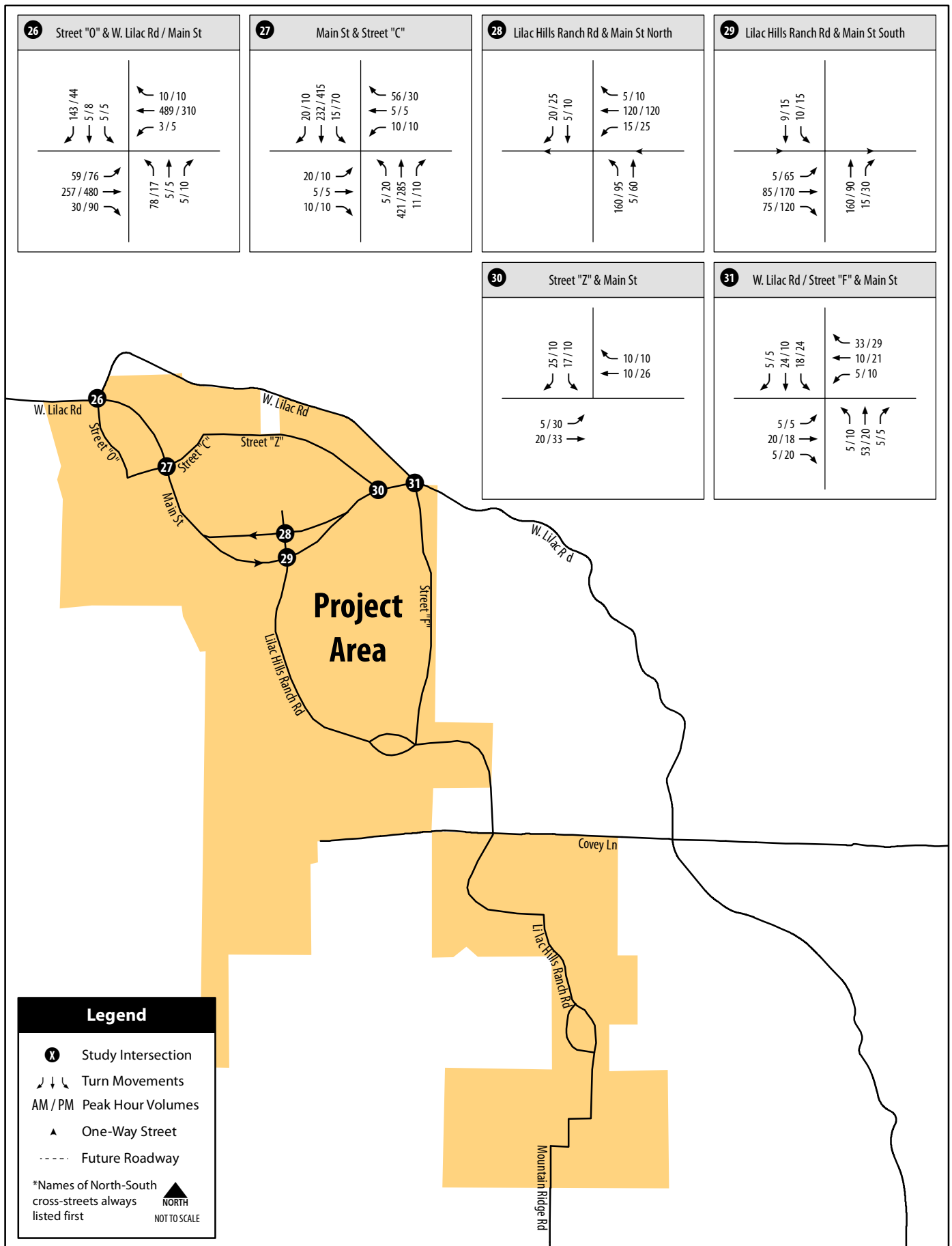
Lilac Hills Ranch Traffic Impact Study

Figure 5-5B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase E, Buildout) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-5B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase E, Buildout) Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 5-5B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase E, Buildout) Conditions

TABLE 5.30
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Roadway	From	To	With Project Buildout				Existing		Project Buildout ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	10,900	3,960	B	1,830	A	2,140	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	8,700	3,160	A	2,270	A	890	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	8,700	3,290	A	2,140	A	1,150	No
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	12,650	D	1,150	A	11,500	No
W. Lilac Road	Main Street	Street "F"	2-Ln	8,700	2,960	A	1,150	A	1,810	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	8,700	1,810	A	1,150	A	660	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	8,700	1,660	A	480	A	1,180	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	8,700	2,470	A	1,170	A	1,300	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	680	A	630	A	50	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,470	A	3,380	A	90	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,660	D	9,350	D	300	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	10,900	9,560	D	8,640	D	920	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-Ln w/ SM	13,500	6,790	C	6,730	C	60	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	8,700	4,950	A	4,850	A	110	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	10,900	15,890	E	15,310	E	580	Yes > 200ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	13,480	A	12,390	A	1,090	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	13,440	A	11,870	A	1,580	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	10,900	5,940	C	4,030	B	1,910	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	10,900	1,910	B	1,770	A	140	No

TABLE 5.30
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Roadway	From	To	With Project Buildout				Existing		Project Buildout ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	10,900	6,970	C	6,840	C	120	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,330	E	15,120	E	210	Yes > 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,340	F	21,020	F	320	Yes > 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	10,900	4,690	C	4,070	B	620	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	13,500	4,440	B	4,170	B	270	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	10,900	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	8,700	1,380	A	1,150	A	230	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	8,700	3,720	A	2,640	A	1,080	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	10,020	D	9,010	D	1,020	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	9,330	D	8,740	D	590	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	10,100	D	9,620	D	480	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,370	C	21,290	C	80	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,670	B	24,280	B	390	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,820	C	22,440	C	380	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,710	D	11,490	D	230	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	8,000	1,480	A	1,460	A	20	No

**TABLE 5.30
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS**

Roadway	From	To	With Project Buildout				Existing		Project Buildout ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,780	D	10,660	D	120	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

RM = Raised Median.

SM = Striped Median.

TWLTL = Two-Way Left-Turn Lane.

**TABLE 5.31
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS**

Intersection	Traffic Control	With Project Buildout				Existing		Change in Delay (sec.) AM / PM	Buildout Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	30.7	C	52.5	D	24.3 / 48.7	C / D	6.4 / 3.8	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	75.3	E	54.0	D	73.9 / 52.3	E / D	<u>1.4</u> / 1.7	-	No Caltrans Int. < 2 sec.
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	45.2	D	62.3	E	43.6 / 60.8	D / E	1.6 / <u>1.5</u>	-	No Caltrans Int. < 2 sec.

TABLE 5.31
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Intersection	Traffic Control	With Project Buildout				Existing		Change in Delay (sec.) AM / PM	Buildout Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
4. Old River Road / Camino Del Rey	OWSC	33.2	D	12.6	B	31.2 / 10.7	D / B	2.0 / 1.9	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	17.8	C	11.4	B	15.4 / 11.0	C / B	2.4 / 0.4	-	No
6. Old Highway 395 / SR-76	Signal	44.5	D	48.6	D	43.0 / 42.2	D / D	1.5 / 6.4	-	No
7. Pankey Road / SR-76	TWSC	15.2	B	19.3	C	12.5 / 15.2	B / C	2.7 / 4.1	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	23.2	C	27.2	D	14.6 / 11.2	B / B	8.6 / 16.0	-	No
9. Old Highway 395 / W. Lilac Road	Signal*	29.3	C	34.2	C	18.5 / 13.3	C / B	10.8 / 20.9	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	12.4	B	19.6	C	10.6 / 12.1	B / B	1.8 / 7.5	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	11.4	B	21.2	C	9.9 / 11.2	A / B	1.5 / 10.0	-	No
12. Old Highway 395 / Camino Del Rey	OWSC	10.4	B	12.0	B	10.1 / 11.0	B / B	0.3 / 1.0	-	No
13. Old Highway 395 / Circle R Drive	Signal*	5.0	A	4.9	A	20.4 / 22.5	C / C	-15.4 / -17.6	-	No
14. I-15 SB Ramps / Gopher Canyon Road	Signal	6.3	A	6.6	A	468.2 / 173.0	F / F	-461.9 / -166.4	-	No
15. I-15 NB Ramps / Gopher Canyon Road	Signal	5.2	A	10.7	B	30.5 / 1945.4	D / F	-25.3 / -1934.7	-	No

TABLE 5.31
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Intersection	Traffic Control	With Project Buildout				Existing		Change in Delay (sec.) AM / PM	Buildout Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
16. Old Highway 395 / Gopher Canyon Road	Signal	17.7	B	18.9	B	16.1 / 8.8	B / A	1.6 / 10.1	-	No
17. Old Highway 395 / Old Castle Road	Signal	14.2	B	17.0	B	13.9 / 15.7	B / B	0.3 / 1.3	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.9	A	10.3	B	8.8 / 9.1	B / A	1.1 / 1.2	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	10.0	B	15.0	C	9.3 / 9.6	A / A	0.7 / 5.4	-	No
20. W. Lilac Road / Circle R Drive	OWSC	13.5	B	22.5	C	9.3 / 9.3	A / A	1.7 / 4.7	-	No
21. Lilac Road / W. Lilac Road	OWSC	10.4	B	11.0	B	9.6 / 9.9	A / A	0.8 / 1.1	-	No
22. Lilac Road / Old Castle Road	OWSC	11.9	B	17.9	C	11.8 / 17.8	B / C	0.1 / 0.1	-	No
23. Valley Center Rd / Lilac Road	Signal	10.9	B	31.5	C	10.5 / 22.6	B / C	0.4 / 8.9	-	No
24. Miller Road / Valley Center Road	OWSC	17.3	C	26.4	D	16.9 / 25.2	C / D	0.4 / 1.2	-	No
25. Cole Grade Road / Valley Center Road	Signal	32.7	C	35.3	D	31.1 / 34.9	C / C	1.6 / 0.4	-	No
26. Street “O” / W. Lilac Road/Main Street	RA	9.3	A	10.8	B	DNE	DNE	9.3 / 10.8	-	No
27. Main Street / Street “C”	RA	7.2	A	8.2	A	DNE	DNE	7.2 / 8.2	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.5	A	8.5	A	DNE	DNE	8.5 / 8.5	-	No

TABLE 5.31
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Intersection	Traffic Control	With Project Buildout				Existing		Change in Delay (sec.) AM / PM	Buildout Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
29. Lilac Hills Ranch Road / Main Street South	AWSC	8.3	A	10.6	B	DNE	DNE	8.3 / 10.6	-	No
30. Street "Z" / Main Street	OWSC	8.7	A	9.0	A	DNE	DNE	8.7 / 9.0	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.8	A	3.8	A	DNE	DNE	3.8 / 3.8	-	No

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E of F.

AWSC = All-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

OWSC = One-Way Stop Controlled.

RA = Roundabout.

DNE = Does Not Exist.

For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

As shown in the table, the following two (2) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Buildout) conditions:

- SR-76 / Old River Road/E. Vista Way (Caltrans) – LOS E during the AM peak hour, and the buildout of the project traffic would not add two seconds or more of additional delay to this intersection.
- SR-76 / Olive Hill Road/Camino Del Rey (Caltrans) – LOS E during the PM peak hour, and the buildout of the project traffic would not add two seconds or more of additional delay to this intersection.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the buildout of the Lilac Hills Ranch project would not have any direct impact at the study area intersections.

Two-Lane Highway Analysis

Table 5.32 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Buildout) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Buildout) conditions and the additional traffic generated by buildout of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.33** displays the resulting level of service for I-15 under Existing Plus Project (Buildout) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Buildout) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the buildout of the project would not cause any direct impacts to study area freeway segments.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Buildout) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.34** and analysis worksheets for the Existing Plus Project (Buildout) conditions are provided in **Appendix Z**.

TABLE 5.32
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

2-Ln Highway	From	To	With Project Buildout			Existing		Project Buildout ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	5,210	D or better	4,770	D or better	440	No
Old Highway 395	SR-76	E. Dulin Road	16,200	6,230	D or better	4,720	D or better	1,520	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	8,010	D or better	4,340	D or better	3,670	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	10,580	D or better	4,450	D or better	6,140	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	6,840	D or better	3,600	D or better	3,240	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	3,190	D or better	2,430	D or better	760	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	6,650	D or better	5,820	D or better	830	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	12,670	D or better	10,710	D or better	1,970	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	9,050	D or better	8,660	D or better	390	No

Source: Chen Ryan Associates; January 2013

TABLE 5.33
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	136,550	8.4%	11,536	0.64	4	0.95	6.75%	1,994	0.849	D	0.016	No
I-15	Old Highway 395 to SR-76	136,640	7.4%	10,165	0.73	4	0.95	6.75%	2,023	0.861	D	0.017	No

TABLE 5.33
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	SR-76 to Old Highway 395	115,320	7.8%	9,020	0.69	4	0.95	8.40%	1,695	0.721	C	0.015	No
I-15	Old Highway 395 to Gopher Canyon Road	113,700	8.1%	9,182	0.67	4	0.95	8.40%	1,681	0.716	C	0.023	No
I-15	Gopher Canyon Road to Deer Springs Road	121,580	8.1%	9,819	0.67	4	0.95	13.20%	1,839	0.783	C	0.029	No
I-15	Deer Springs Road to Centre City Parkway	121,050	8.0%	9,725	0.66	4	0.95	13.20%	1,813	0.771	C	0.026	No
I-15	Centre City Parkway to El Norte Parkway	114,210	8.0%	9,176	0.66	4	0.95	13.20%	1,710	0.728	C	0.020	No
I-15	El Norte Parkway to SR-78	129,970	7.9%	10,230	0.66	4	0.95	10.00%	1,879	0.800	C	0.018	No
I-15	SR-78 to W Valley Parkway	194,200	8.1%	15,805	0.60	5+2ML	0.95	10.00%	1,497	0.637	C	0.007	No
I-15	W Valley Parkway to Auto Parkway	180,850	8.1%	14,718	0.60	5+2ML	0.95	10.00%	1,394	0.593	B	0.006	No
I-15	Auto Parkway to W Citracado Parkway	173,800	7.8%	13,479	0.60	5+2ML	0.95	10.00%	1,269	0.540	B	0.006	No
I-15	W Citracado Parkway to Via Rancho Parkway	197,590	7.8%	15,324	0.60	5+2ML	0.95	7.00%	1,422	0.605	B	0.005	No
I-15	Via Rancho Parkway to Bernardo Drive	199,470	7.4%	14,680	0.58	5+2ML	0.95	7.00%	1,322	0.562	B	0.004	No

**TABLE 5.33
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS**

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Bernardo Drive to Rancho Bernardo Road	202,380	7.4%	14,895	0.58	5+2ML	0.95	7.00%	1,341	0.571	B	0.004	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	210,290	7.3%	15,439	0.54	5+2ML	0.95	7.00%	1,288	0.548	B	0.003	No
I-15	Bernardo Center Drive to Camino Del Norte	215,230	7.3%	15,802	0.54	5+2ML	0.95	7.00%	1,318	0.561	B	0.003	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

TABLE 5.34
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE E - BUILDOUT) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,560	>1500: (Over Capacity)
	PM	1,312	1200-1500: (At Capacity)
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,210	1200-1500: (At Capacity)
	PM	1,379	1200-1500: (At Capacity)
SR-76 / Old Highway 395	AM	1,089	<1200: (Under Capacity)
	PM	1,160	<1200: (Under Capacity)

Source: Chen Ryan Associates; January 2013

As shown in the table, all three (3) intersections along SR-76 would operate at “At Capacity” and/or “Under Capacity”, with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at “Over Capacity” during the AM peak hour under the Existing Plus Project (Buildout) conditions.

5.5.3 Existing Plus Project (Buildout) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Buildout) conditions.

Roadway Segments

Based on the County planning level impact criteria, buildout of the project traffic would result in direct impacts at three (3) of the study area roadway segments, including:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – The project would add 580 daily trips (approximately 3.6% of the total ADT) to this roadway which is approximately 7 miles away from the project site.
- E. Vista Way, between SR-76 and Gopher Canyon Road - The project would add 210 daily trips (approximately 1.4% of the total ADT) to this roadway which is approximately 9 miles away from the project site.
- E. Vista Way, between Gopher Canyon Road and Osborne Street – The project would add 320 daily trips (approximately 1.5% of the total ADT) to this roadway which is approximately 9 miles away from the project site.

Given the rural community character where Gopher Canyon Road and E. Vista Way are located and the minimal interruption to traffic flows, a more detailed arterial analysis was conducted. In this case, it was important to consider how performance of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour traffic.

Highway Capacity Software (HCS) 2000 developed by McTrans was employed for the arterial analysis. The HCS arterial analysis methodology is based upon Chapter 15 (Urban Street) and Chapter 20 (2-Lane Highway) of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to the roadway functional classification. The two segments along E. Vista Way, between SR-76 and Gopher Canyon Road, and between Gopher Canyon Road and Osborne Street were evaluated as a Class I arterial with a free-flow speed (FFS) of 50 mph since traffic signals along this facility are located less than one mile apart; while Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps was analyzed as a Class II 2-lane highway given the fact that traffic signals are located at more than two-mile apart (> 4 miles).

Table 5.35 displays the measure criteria (arterial travel speed or percent time spent following) and level of service, and the respective analysis worksheet is included in **Appendix AA**.

TABLE 5.35
ARTERIAL LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E - BUILDOUT) CONDITIONS

Arterial	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
		Speed (mph)	LOS	Speed (mph)	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	50	79.1% PTSF	D	83.5% PTSF	D
E. Vista Way, between SR-76 and Gopher Canyon Road	50	25.6 mph	D	31.8 mph	C
E. Vista Way, between Gopher Canyon Road and Osborne Street	50	24.2 mph	D	22.0 mph	D

Source: Chen Ryan Associates; May 2013

Note: PTSF = Percent time-spent-following.

As shown in the table above, all three (3) segments would operate at acceptable LOS D or better under Existing Plus Project (Buildout) conditions based on the arterial analysis. Therefore, it is appropriate to consider that no mitigation measures would be necessary at these locations.

Intersections

None of the study area intersections would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

Table 5.36 summarizes potential impacts and recommended mitigation measures associated with buildout of the Lilac Hills Ranch project.

TABLE 5.36
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE E - BUILDOUT) CONDITIONS

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Roadway Segment</i>		
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	None	<ul style="list-style-type: none">• Rural community character• Minimal project trips added• Distance from project site• Acceptable Percent Time Spent Following (Class II Two-Lane Highway criterion)
E. Vista Way, between SR-76 and Gopher Canyon Road	None	<ul style="list-style-type: none">• Rural community character• Minimal project trips added• Distance from project site• Acceptable arterial speed
E. Vista Way, between Gopher Canyon Road and Osborne Street	None	<ul style="list-style-type: none">• Rural community character• Minimal project trips added• Distance from project site• Acceptable arterial speed
<i>Intersection</i>		
None	-	-
<i>Two-Lane Highway</i>		
None	-	-
<i>Freeway</i>		
None	-	-

Source: Chen Ryan Associates; May 2013

Note that the Existing Plus Project (Buildout) scenario includes the project's build-out traffic volumes added to the existing traffic volumes and existing roadway configurations and is shown in Traffic Analysis Phases A-E above as required by the County's Guidelines for Determining Significance and Report Format & Content Requirements for Transportation and Traffic.

6.0 Cumulative Traffic Conditions

This section describes cumulative land development projects anticipated to generate additional traffic within the study area. Potential traffic impacts to the existing transportation network, due to the addition of cumulative projects and proposed project traffic, were also assessed.

6.1 Cumulative Projects

SANDAG's Series 12 Year 2020 Transportation Model was utilized to forecast cumulative traffic volumes. SANDAG Year 2020 land use assumptions were examined to ensure that anticipated land development projects within a seven-mile radius of the proposed project, were accurately reflected in the model. A list of 169 cumulative projects was compiled, including:

- #1 - #96 - The cumulative project list utilized for the recent Meadowood development project;
- #97 - #109 - Geographically applicable projects from the County GPA Property Specific Workplan list of 56 projects, dated June 28, 2012;
- #110 - #169 - A list of discretionary projects obtained from SanGIS (August 2011) and refined to include projects with potentially relevant trip generation, such as Major Use Permits, General Plan Amendments, Specific Plans and Amendments, Tentative Maps, and Tentative Parcel Maps. Both County staff input and the KivaNet system were utilized to gather detailed project land use descriptions.

Table 6.1 displays the approved and pending cumulative project list which was incorporated in the SANDAG Transportation Model. A SANDAG model trip generation report is included in **Appendix AB**. **Figure 6-1** illustrates the location of the cumulative projects.

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
1	Campus Park	Mixed-use development, including: 529 single-family dwelling (SFR) units, 555 multi-family dwelling (MFR) units, a town center (retail) of 62,000 square feet (sf), an office building with 150,000 sf, a sports complex of 5.2 acres, and a small neighborhood park.	TM 5338 GPA 03-004	417	Just north of SR-76, 0.25 mile east of I-15

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
2	Campus Park West	Mixed-use development including approximately 355 MFR units, 400,000 sf Commercial, 50,000 sf Office Professional, 347,000 sf of Light Industrial, and possible Civic Uses..	TM 5424, S 05-014, SPA 05-001 GPA 05-003 REZ 05-005	118.5	Northeast quadrant of I-15 and SR-76
3	Pala Mesa Highlands	Maximum of 130 SFR. Density 1.6 DU/acre. Lot sizes vary from 5,500 sf to 23,500 sf, two parks totaling 4.3 acres, trails, 36.5 acres of open space. SPA to allow clustering.	TM 5187 RPL ¹¹ SPA 99-005 MUP 99-020 REZ 99-020 MUP/REZ 04-024	84.6	West of Old Highway 395 between Pala Mesa Drive and Via Belamonte
4	Tedder TM	Split lot into 13 SFR lots, ranging in size from 1.0 to 6.43 acres net.	TM 4729 RPL ³ TE	29.5	South side of Pala Mesa Drive, west of I-15 and east of Daisy Lane
5	Hukari subdivision	Minor residential subdivision with road improvements. 4 SFR lots plus one remainder lot (3.4 to 7.7 net acres each).	TPM 20830	30	Northern terminus of Mountain View Road and West Lilac Road on west side of Bonsall
6	Fallbrook Ranch	11 SFR lots	TM 5532 S 07-012	--	East of Old Highway 395 and Sterling View Drive (at Mission Road), Fallbrook
7	Los Willows Inn and Spa	Add additional units to a Bed and Breakfast	MUP 03-127	--	532 Stewart Canyon Road
8	Reeve TPM	Minor residential subdivision. 3 SFR lots (2 acres minimum).	TPM 20411	8.8	2987 Sumac Road, Fallbrook
9	Evans TPM	Minor subdivision into 2 residential/agricultural parcels (2.00 and 2.10 acres). Private septic system.	TPM 20491	4.10	West side of Sage Road between Sumac Road and Pala Road, Fallbrook
10	Bridge Pac West I TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot (2.04, 2.08, 2.12, 2.14 and remainder 7.08 net acres each).	TPM 20841	15.90	3321 Sage Road, Fallbrook

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
11	Pala Mesa Resort	Specific Plan Amendment for modification and construction of new recreation and resort-related facilities. Addition of 186 resort rooms and wedding facility. Expansion of resort by 6 acres.	SPA 03-005 R 00-000 MUP 00-000 P 74-120W ¹ P 74-121M ¹⁰ ; MUP 03-006; MUP 04-005	181.2	2001 Old Highway 395 at Tecalote Lane, north of SR 76 and immediately west of I-15, Fallbrook
12	Lung TPM	Minor residential subdivision. 2 SFR lots (6.7 and 4.0 acres)	TPM 20431 S 98-006	10.7	Citrus Drive and Calle Canonero, Fallbrook
13	Chipman TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot, ranging from 2.13 to 2.85 net acres each and remainder 4.00 net acres. Septic system.	TPM 20440	13.54	East side of Citrus Lane between Peony Drive and Dos Ninos, Fallbrook
14	Bierman TPM	Minor residential subdivision. 4 SFR lots, ranging from 2.01 to 2.19 net acres each. Septic system.	TPM 20484	9.91	4065 Calle Canonero, Fallbrook, south of Vern Drive and west of Lorita Lane
15	Cooke Residence	4,723 s.f. SFR	S 04-026	N/A	3974 Citrus Drive between Wilt Road and Vern Drive
16	Treister TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot.	TPM 20581	21.81	Donut-shaped parcel surrounding 401 Ranger Road, Fallbrook
17	Mission Ridge Road TPM	Minor residential subdivision. 4 SFR lots.	TPM 20793 03-02-068	19.55	235 Mission Ridge Road east of I-15 off Mission Road, Fallbrook
18	Rancho Alegre TPM	Part of 116-acre subdivision (33 lots). This project consists of 20 lots in the eastern portion of property and proposes a different street alignment, grading, and lot arrangement.	TM 5413	70	West side of Ranger Road approx. 0.4 mile north of Reche Road
19	Rarick TPM	Minor residential subdivision. 4 SFR lots (ranging from 2.02 to 2.25 acres each). Septic system.	TPM 20853	8.77	3261 Reche Road, Fallbrook
20	Fernandez TPM	Minor residential subdivision. 4 SFR lots. Minimum lot size 2 acres. 2 existing SFR on-site.	TPM 20936	10.4	3838 Foxglove Lane, Fallbrook

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
21	Rabuchin TPM	Subdivision of 2 lots into 4 SFR lots. Existing SFR on site	TPM 20944	9.91	4065 Calle Canonero, Fallbrook
22	Pala Casino	187,300 s.f. casino, hotel, theater.	NA	TBD	Pala Road and Pala Mission Road
23	Rosemary's Mountain/Palomar Aggregates Quarry	Aggregate rock quarry and processing plants for concrete and asphalt. Approximately 22 million tons of rock would be mined over 20 years. Realignment of SR 76 from Project site west to I-15. Reclamation Plan to designate lower portion of site as water storage reservoir after completion of mining activities.	MUP 87-021 RPL ² REZ P87-001 RPL ²	96.4	North side of SR 76, 1.25 miles east of I-15
24	Patapoff Minor Residential Subdivision	Subdivide property into four parcels of 4.3 acres, 4.2 acres, 9.6 acres, 8 acres, and a 33-acre parcel	TPM 20542	59.1	Southern end of Rainbow Hills Road
25	Prominence at Pala	Subdivide the property into 30 SFR and two open space lots ranging in size from 4 to 96 acres	TM 5321	346.6	Pala Del Norte Road. 1/3 mile north of SR-76 and approximately two miles west of the Pala Indian Reservation
26	Palomar College North Education Center District Master Plan	New Community College campus to serve approximately 12,000 students, to include classroom and administration buildings, parking, open space, athletic fields, and off-site road, water and sewer improvements.	NA	85	East side of I-15 between Pankey Road and Pala Mesa Heights Drive
27	Caltrans Realignment of SR-76	Realignment and widening of roadway, improvements to northbound I-15 on- and off-ramps.	NA	NA	From I-15 to west of Rice Canyon Road
28	San Luis Rey Municipal Water District (SLRMWD) Water, Wastewater and Recycled Water Master Plan	Exploration of pipeline and water storage options.	NA	Over 3,000	SLRMWD service area and vicinity, north and south of SR-76 between I-15 and Pala Temecula Road
29	--	39 condo units	TM 5231	30.48	Canonita Drive and Old Hwy 395, Fallbrook

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
30	--	8 SFR lots	TM 5276	12.8	Aqueduct Road and Via Urner, Bonsall
31	--	9 SFR lots	TM 5346	38.4	Old Hwy 395 and Via Urner, Bonsall
32	Marquart Ranch	9 SFR lots. Includes improvements to Mesa Lilac Road, and drainage improvements.	TM 5410	44.2	West Lilac Road and Mesa Lilac Road, Bonsall
33	Fallbrook Oaks	19 SFR lots	TM 5449	26	Reche Road and Ranger Road, Fallbrook
34	Ridge Creek Drive	14 SFR lots	TM 5469	30.4	Ridge Creek east of Live Oak Park Road and Ridge Drive, Fallbrook
35	Club Estates	31 SFR lots	TM 5499	48.3	SR 76 east of Cole Grade Road at Pauma Valley Drive
36	Oak Tree Ranch TM	24 SFR	TM 5540; MUP 07-007	9.95	15560 Spring Valley Road
37	Turnbull TM	17 lots	TM 5545	22.9	32979 Temet Drive
38	Wexler TPM	4 lots	TPM 20913	2.54	--
39	Shadow Run Ranch	54 SFR lots and 2 open space lots. MUP filed concurrently for Planned Residential Development that would cluster residential development on minimum 2-acre lots.	TM 5223 MUP 00-030	263	Shadow Run Ranch, SR-76 and Adams Drive, Pala
40	Diana Acres	3 lots	TPM 20896	--	Adams Drive off SR-76, Pauma Valley
41	Hunter Subdivision	3 lots	TPM 20804	7.5	15550 Adams Drive
42	Burge TPM	4 lots plus remainder	TPM 20538	12.58	34487 Citracado Drive, Pala
43	Pauma Valley Packing Company	Packing and processing	MUP 99-001	4.14	34188 Hampton Road
44	Shadow Run Ranch/ Schoepe-Pauma TM	13 lots	TM 5223; MUP 00-030	263.17	15040 Adams Drive

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
45	Warner Ranch	732 SFR lots, 168 condo units, community park, fire station lot	TM 5508	513	Pala-Pauma
46	Pauma Casino and Hotel	400 room hotel and 171,000 s.f. casino	CASINO	--	Approximately 11 miles east of I-15 along SR-76
47	De Jong/Pala Minor Subdivision	Minor residential subdivision. 3 SFR lots (1.03, 2.06 and 2.31 net acres each).	TPM 20451	5.62	Canonita Drive between I-15 and Tecalote Drive
48	Crossroads Investors Minor Subdivision	Minor residential subdivision. 4 SFR lots plus one remainder lot. Existing SFR and grove on site	TPM 20800	15.5	Ranger Road, Fallbrook
49	Chaffin/Red Mountain Ranch Subdivisions	Withdrawn TM 5217: Residential development with 29 SFR lots (2.28 to 18.33 acres) and 2 biological open space zones. TM 5225: 55 acres divided into 6 SFR lots (8.1 to 13.9 acres). TM 5227: 44.5 acres divided into 4 SFR lots (8.08 to 13.71 acres each). TM 5228: 19.1 acres divided into 2 lots (8.4 and 10.7 acres).	TM 5217/5225/5227/5228 MUP 00-027	455.9	Rainbow Glen Road and Red Mountain Dam Road, Fallbrook
50	John Collins TPM	2 lots	TPM 20505	8.29	Margarita in Fallbrook
51	Brannon Trust TPM Remai	4+ lots	TPM 21085	--	411 Yucca Road, Fallbrook
52	Dien N Do TPM	4+ lots	TPM 20976	--	405 Ranger Road
53	Tim Rosa TPM	4 lots plus remainder	TPM 20373	13	2973 Los Alisos Drive
54	Leising TPM	4 lots	TPM 20427	10.83	1246 Via Vista
55	Atteberry TPM	3 lots	TPM 20434	9	1166 Sierra Bonita
56	Johnson TPM	2 lots	TPM 20980	--	3035 Trelawney Lane
57	Chipman TPM	4 lots plus remainder	TPM 20381	24.5	Camino Zasa, Fallbrook
58	American Lotus Bhuddist Association TPM	4 lots plus remainder lot	TPM 21047	--	Reche Road at Rabbit Hill, Fallbrook
59	Reche Road TM	12 SFR lots	TM 5547	33.5	3129 Reche Road, Bonsall

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
60	Palisades Estates	51 lots	TM 5158; RPL3	408.4	3880 Dos Niños Road/Elevado Road
61	Dion TPM and time extension	2 lots	TPM 19742	7.5	3562 Canonita Drive
62	Patricia Daniels TPM	4 lots plus remainder	TPM 20476	13.2	3609 Canonita Road, Fallbrook
63	Cameron Subdivision	Minor residential subdivision. 3 SFR lots (2.22, 2.44 and 6.37 acres each). Septic system.	TPM 20443	11.31	2644 Vista de Palomar, Fallbrook. North side of Vista de Palomar between Post Hill and Via Rancheros
64	Tesla Gray TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot. Future development of 5 SFR	TPM 20473	28.91	East end of Vista de Palomar, and north end of Old Post Road, Fallbrook
65	Aspel TPM	Minor residential subdivision. 2 SFR lots (2.09 and 5.20 acres each).	TPM 20592	7.32	3107 Old Post Road, Fallbrook
66	James Patapoff TPM	Subdivision of 16.8 acres into 4 lots plus a remainder lot	TPM 20317	16.8	2639 Via Alicia, Fallbrook
67	Yew Tree Spring Water Corporation	3 residential lots	TPM 20503	7.48	3573 Diego Estates Drive, Fallbrook
68	Haugh, Granger TPM	4 lots	TPM 20610	12.94	Fallbrook
69	Brown, Lee & Karen, TPM	3 lots	TPM 20614; RPL1	6.46	3850 Gird Road
70	Pepper Drive TPM	4 residential lots	TPM 20648	1.39	3926 Flowerwood Lane
71	Surf Properties TM	15 lots	TM 4971	46.89	3545 Vista Corona
72	Brook Hills TM	35 lots	TM 4908	96.71	4061 La Cañada Road, Fallbrook
73	Latter-Day Saints/Via Monserate	17,000 sq. ft. church and meeting rooms	MUP 02-011	7.96	Fallbrook
74	Leeds and Strausss TM	17 SFR lots – TM time extension until 09/13/2009	TM 4976; RPL4	45.76	North side of Olive Hill Road, near intersection with SR-76, Bonsall

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
75	Murray Davidson	7 lots	TM 5398	4.28	3956 Pala Mesa Road, Bonsall
76	Shamrock Partners TPM	3 lots	TPM 20173	10	Shamrock Road, Bonsall
77	Crook TPM	5 lots	TPM 20851	--	32179 Shamrock Road
78	Tabata Bonsall TPM RPL1	4 lots	TPM 20729	33.75	5546 Mission Road
79	Berezousky TPM (311 Same as one in original latch)	Subdivision of 3.11 acre into 4 residential lots. Existing SFR on site	TPM 20874	3.11	4040 Pala Mesa Drive, Fallbrook
80	Murray Davidson TPM	Subdivision of 1 lot into 4 SFR lots plus a remainder lot	TPM 20932	--	3956 Pala Mesa Road, Fallbrook
81	Sumac TPM	4 lots	TPM 21076	--	3111 Sumac Road
82	Janikowski SFR	3,200 s.f. SFR	S 03-024	5.12	9686 Pala Road (SR 76), Fallbrook, on north side of SR 76
83	Kratochvid TPM; expired map	4 lots	TPM 19827	12.3	Old Highway 395
84	Kohl TPM	4 lots plus remainder	TPM 20319	9.71	7641 Mount Ararat Way, Bonsall
85	Woodhead TPM	4 lots plus remainder	TPM 20541	12.54	Mt. Ararat Way, Bonsall
86	Rockefeller TPM	2 lots	TPM 20596	5	9590 Lilac Way, VC
87	McNulty TPM	2 lots	TPM 20763	5.19	32171 Dos Niñas
88	Stehly Caminito Quieto TPM	4 lots	TPM 20799	11.69	32009 Caminito Quieto at West Lilac Road
89	Sanders TPM	4 lots plus remainder lot	TPM 20845	--	West Lilac Road, 1.25 miles west of Old Highway 395
90	Pala Shopping Center	Addition of 5 commercial buildings to an existing commercial site with grocery store.	S 02-061	3.88	On Old Highway 395 just northwest of the intersection of I-15 and SR 76
91	Monserate TM	7 SFR	TM 5489	24.6	3624 Monserate Hill Road

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
92	Dimitri, Diffendale, and Kirk TPM	4 lots	TPM 21075	--	Monserate Hill Road and Monserate Place
93	Madrigal TPM	3 lots	TPM 20994	--	1055 Rainbow Valley Boulevard near Old Hwy 395
94	Singh Power Plant	Power Generation facility	MUP 07-009	8.5	4 miles NE of I-15 on Pala Del Norte Road, north of SR 76
95	Gregory Landfill	Landfill site for solid waste	37-AA-0032	1,770	Approximately 3.5 miles east of I-15 on SR-76
96	Meadowood	355 single-family dwelling units, 503 multi-family dwelling units, a 10 acre neighborhood park, and an elementary school.	TM 5354 & GPA 04-02	--	Just north of SR-76, 0.25 mile east of I-15
97	Bonsall - BO 18,20,22,29,32, 33	61 Rural Single Family Residential - 1 unit per every 4 acres.	Bonsall - BO 18,20,22,29,32,3 3	--	Bonsall - North of Camino Del Rey, west of I-15
98	Fallbrook - FB 17, 18	28 Single Family Rural Residential - splitting between SR1 and SR2 classification.	Fallbrook - FB 17, 18	--	Reche Road, West of Ranger Road
99	Fallbrook - FB 21,22,23	7 Single Family Rural Residential - SR10 Class.	Fallbrook - FB 21,22,23	--	Northern border of county, next to river side county
100	Fallbrook - SR2	3 Single Family Rural Residential - SR10 class.	Fallbrook - SR2	--	East of I-15 / Mission Road interchange
101	Fallbrook - FB19,25,26	13 Single Family Rural Residential - SR10 class.	Fallbrook - FB19,25,26	--	North of Pala, East of I-15, west of Rice Canyon
102	Fallbrook - FB 21,22,23	7 Single Family Rural Residential.	Fallbrook - FB 21,22,23	--	Northern border of county, next to river side county
103	North County Metro - NC22	44 Single Family Rural Residential - SR1 class.	North County Metro - NC22	--	North of San Marcos Boundary, along Las Posas Road
104	North County Metro - NC37	30 Single Family Rural Residential - to SR4	North County Metro - NC37	--	West of Twin Oak Valley Road, northwest of Deer Spring road, at Calafia Road

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
105	North County Metro - NC3A	10 Single Family Residential - SR10	North County Metro - NC3A	--	North-East of Broadway/Jesmon Dende, Access Vista Verde
106	North County Metro - NC42	1162 units compose mostly of Multi Family Residential and a combination of SR.5, SR2 or RL20 on the remaining land.	North County Metro - NC42	--	North of Deer Spring, West of I-15, South of Gopher Canyon
107	Valley Center - VC51	15 Single Family Rural Residential - SR-4	Valley Center - VC51	--	Corner of Courser Canyon and Lilac Road
108	Valley Center - VC57,63,64	238 Single Family Rural Residential - SR-2	Valley Center - VC57,63,64	--	Corner of Valley Center Road / Mactan Road
109	Valley Center - VC67	North and south of Valley center road between Miller Road and Cole Grade Road	Valley Center - VC67	--	North and south of Valley center road between Miller Road and Cole Grade Road
110	Casa de amparo, mup,	This project is a Major Use Permit for a group residential care facility to serve up to 60 children and the child development center would have the capacity to serve 46 children.	04-14603	--	325 Buena Creek Rd
111	Dai dang meditation center	The permit will provide for the development of the following buildings totaling 22,796 square feet: a Meditation Hall, Residence Quarters, and the Main Worship Hall	04-11468	--	6326 Camino Del Rey
112	Dougherty pet resort/mup 10-027	The project also includes a proposed 1,056 square foot kennel with a rooftop grass deck and pedestrian bridge. Enough kennel for 40 dogs/cats	07-0081283	--	1412 Windsong Lane
113	Gainer, major use permit, p08-052	The project consists of construction of an approximately 10,368 square foot horse stable to accommodate up to 18 horses, construction of a 10,800 square foot covered riding arena, and improvement of the existing driveway.	08-0096048	--	6893 West Lilac Road

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
114	Patnode ; mup 08-036	The project proposes to construct a 4,000 square foot reception hall (not permitted in the zone), pave driveways for a shuttle to move the event attendees, and to use the existing residence as a staging area for scheduled events. Also, an unpaved parking area is proposed (not permitted).	08-0100394	--	14044 Horse Creek Trail
115	Valley center comm church	The project is a Major Use Permit for a new church campus on a 20.56-acre parcel. Construction will occur in four phases; at the completion of the final phase of construction, the church campus would consist of six main structures totaling approximately 65,000 square feet with associated parking, landscaping and outdoor areas.	04-13720	20.56	29010 Cole Grade Road
116	Casa de amparo mup minor deviation p 03-	Foster Care Facility for Casa de Amparo - 4-Bldgs for a total sq footage of 28353.	10-0121634	--	325 Buena Creek Road
117	Champagne lakes, mup, mod	Modification for the relocation of 51 RV spaces and one mobile home space to include full hookups to 20 RV spaces, a new restroom, and an area screened by landscaping for vehicle storage.	06-0055819	--	8310 Nelson Way
118	Crossroads church, mup mod for pre-schoo	The modification proposes to install and operate relocatable pre-school classrooms. The pre-school classrooms will have a maximum of 100 students and will operate from 6am to 6:30pm Monday through Friday.	08-0094758	--	2406 N. Twin Oaks Valley Road
119	Moody creek farms llc, mup mod; p79-134w	The project will consist of expansion of the footprint of the previously approved Major Use Permit to include all of the stables; barns; riding rings and arenas; ¾ mile horse training track; ranch manager's residence; farm employee housing; and accessory structures associated with the Equestrian Facility.	09-0107476	--	30185 and 30321 Camino De Los Caballos; 31257 Via Maria Elena

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
120	Vista valley country club, spa and mup m	Total increase of 12,520 sq. feet enclosed and 4,442 sq. feet un-enclosed.	08-0100054	--	2262 Gopher Canyon Road
121	Hidden meadows - oak woodlands rezone	The Project will contain 17.3 acres of General Commercial, 5.6 acres of Office/Professional, 7.7 acres of 10.9 DU/AC Multifamily Residential and 5.2 acres of 15.0 DU/AC Multifamily Residential.	04-16685	17.3	This property is within the Northern Village Town Center of the Valley Center Community.
122	Mountain gate rezone for tm timex	Tentative Map Time Extension and Rezone to make sure that only those uses consistent with the Specific Plan are permitted. Tentative Map authorized a total of 147 single family lots.	04-15133	--	27319, 27321, 27329 Mountain Meadow Road
123	Orchard run major subdivision (296 lot)	Withdrawn	08-0092691	--	Valley Center Road; 13675 Old Road; 28290 Lilac Road
124	Tentative map	Approved Tentative Map for 16 dwelling units on 41.7 acres.	04-20072	41.7	14357 Tyler Road
125	Alti, gpa, rez,	GPA withdrawn; however, the Tentative Map (TM 5551) proposes to subdivide 59.52 acre site into 71 lots.	06-0064250	59.52	14096 Sunday Drive; 27845 Valley Center Road
126	Beauvais tm	Tentative Map to subdivide 23.2 acres into 7 residential lots.	04-13906	23.2	South of intersection of Bella Linda and Old Castle Road
127	Brisa del mar	The project is a Tentative Map for a residential subdivision of 206 acres into 27 x 2-acre minimum lots.	06-0060719	206	31002 Aquaduct Road; 7520, 7530, 7570, 7574, 7650 Camino Del Rey
128	Canyon villas welk tm, rez and stp	The project is a Rezone and Tentative Map (TM 5313) to subdivide 20.89 acres into 177 time share units.	04-13850	20.89	28833, 28915 Champagne Blvd; 8860 Welk View Drive
129	Charles froehlich tm	The project is a residential subdivision of two parent parcels, resulting in a total of six lots. The site is located on Double K Road within the Valley Center Community Planning Group in unincorporated San Diego County.	06-0061043	--	Sierra Roja and Double K

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
130	Circle p lane tm5468rpl3	The project is a Major Subdivision of 11 proposed lots ranging in area from 1.03 to 2 gross acres on a 15.48-acre property with access via a private easement road from Mountain Meadows Road. The subject property is designated (2) Residential by the North County Metropolitan Subregional Plan	05-0055339	15.48	10264 Circle P Lane; 27446 Mountain Meadow Road
131	Dabbs tentative map	This is a request for a tentative map on 38.4 acres (gross acres). The subdivision proposes 9 lots. Each proposed lot will be 4 acres in size (net acres).	04-11658	38.4	32006 Aquaduct Road
132	Foxenwood prd tm4836 & stp89-041	Tentative Map to subdivide 45.2 acres into 17 dwelling units.	04-20362	45.2	Mirar De Valle
133	Golf green estates/s/site plan	116 Lot subdivisions of 6,000 square foot parcels.	06-0061925	--	Old River Road and Camino Del Rey
134	Kawano subdivision	Tentative Map to subdivide 10.51 into 8 residential lots.	04-0029730	10.51	1050 Ora Avo Drive
135	Mcintyre subdivision tm5014	Lilac Mtn Rch: 22-lot/108-ac	05-0060917	--	11278 Lilac Vista Drive;
136	Oak glen	The project proposes major subdivision of 20.01 acres. The subdivision proposes nine single family residences on 2 acre minimum lots. 9 Single Family Residential.	05-0046937	20.01	14099 West Oak Glen Road
137	Orchard vista, tm, rez	Withdrawn	06-0064848	--	13278 Orchard Vista Road
138	Pauma ranches	The project is a Tentative Map to subdivide 100 acres into 22 residential lots, with each lot no less than 4 acres in size.	06-0064845	100	30434 Montrachet Street;
139	Rabbit run, tm, 10 lots	The project is a major subdivision of 17.70 gross acres into 7 lots ranging in size from 2.03 to 4.02 gross acres.	06-0057789	17.7	29222, 29270 Duffwood Lane
140	West lilac farms i & ii	Approved Tentative Map for 28 single family lots on 92.8 acres.	04-14957	92.8	31817 Via Ararat Drive; 32542 Aquaduct Road

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
141	Boyer tpm 20794	Approved Tentative Parcel Map for 3 lots on 3 acres.	04-11552	3	
142	Cunningham , tpm, 2 lots	The project proposes to create two legal lots from Assessor Parcel Numbers 172-140-62 and 64. Parcel 1 is 7.40 net acres and Parcel 2 is 17.6 net acres.	05-0060144	25	1221 Tarek Trail
143	Fitzpatrick tpm	The project is a minor subdivision of a 10.8-acre parcel currently being used for agriculture (avocado grove). The project proposes to develop four residential lots ranging in size from 2.3 to 3.1 acre.	04-0023583	10.8	Tomsyl Road
144	Gangavalli, tpm, 2 lots	The project proposes to divide 5.05 net acres into 2 parcels measuring 2.51 acres gross (2.29 acres net), and 2.51 acres gross (2.45 acres net).	07-0086629	5.05	10418 King Sanday Lane
145	Goodnight ranchos, tpm, 2 lots	The project proposes to divide 5.0 acres into 2 parcels measuring 2.45 acres net each. The proposed parcels will have frontage upon Circle R Lane.	06-0058961	5.0	30359 Circle R Lane
146	Harlow minor subdivision (3 lots); tpm	3 Lot Subdivision	08-0096323	--	12542 Betsworth Road
147	Hefner/brown 4 lot and remainder tpm: tp	Subdivide a +/-57.9 acre parcel into four lots plus a remainder (lots range from 7.4 to 13.1 net acres).	09-0108702	57.9	31460 Aquaduct Road
148	Kim tentative parcel map	4 lots TPM w/ Remainder Parcel The project is a tentative parcel map application to subdivide a 46.72 acre parcel into 4 lots plus a remainder lot, ranging in area from 7.4 acres to 12.2 acres, for residential land use.	10-0135167	46.72	29640 Pamoosa Lane
149	Kirkorowicz, tpm,	The project proposes a two lot subdivision for the creation of two single-family residences and associated driveways and septic.	05-0054874	8.58	Fairview Road
150	Matheson, 2 lot tpm; tpm 21173	12.83 acres into 2 residential lots of 4.013 and 8.259 net acres.	10-0122579	12.83	1202 Rancho Luiseno Road
151	Mc bride, tpm, 2 lots	2-lot residential subdivision	07-0086911	--	29945 Spearhead Trail

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
152	McNally rd parcel map	The project proposes to divide 78.3 acres into 4 parcels and a remainder measuring 8.3 acres net, 4.2 acres net, 4.0 acres net, 4.0 acres net and 57.8 acres net, respectively.	06-0059622	78.3	McNally Road; Lilac Road
153	Modelmoa tpm	Tentative Parcel Map to subdivide 21.1 acres into 4 parcels and a remainder.	04-13025	21.1	30455 and 30463 Roadrunner Ridge South
154	Mustafa tpm	Tentative Parcel Map to subdivide 16.4 acres into 4 parcels and a remainder.	04-11418	16.4	9770 Circle R Road
155	Nichols whitman, tpm, 4 lots	TPM 4 Lots	05-0045920	--	10015 W Lilac Road
156	Rimsa tpm 2 lots	2 Single Family Residential lots	06-0058024	--	235 West Camino Calafia
157	Rios, tentative parcel map; tpm 21143	The project is a minor subdivision to create 2 parcels	08-0103568	--	12902 Mirar de Valle Road
158	Robinson, tpm, 4 lots	4 Single Family Residential lots	07-0087850	--	10127 Circle R Drive
159	Sage meadow tpm	2 Single Family Residential lots	06-0070181	--	13510 Sage Meadow Lane
160	Sanders, tpm, bc, 4 lots +	Tentative Parcel Map: Standard 4 lots plus a reminder lot	04-0022522	--	6993 W Lilac Road
161	Souris, tpm, 4 lots	Divide 38.8 net acres into 4 parcels ranging in size from 4.01 to 21.47 net acres. One existing single-family residence and guesthouse resides on Parcel 3 and will remain	05-0060924	38.8	14174 Sun Rocks Drive
162	Tran tentative parcel map	4 Single Family Residential lots	04-0021712	--	29623 Valley of the King Road
163	Turner, tpm	4 Single Family Residential lots	08-0090536	--	29133 Sandy Hill Drive
164	Weber, 4 lot tpm, tpm 21128	4 Single Family Residential lots	08-0097087	4.67	3458 Royal Road
165	Wild, tentative parcel map; tpm 21170	4 Single Family Residential lots	09-0117871	--	1560 Wild Acres Road

**TABLE 6.1
CUMULATIVE PROJECTS**

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
166	Yuan, minor subdivision + remainder, tpm	The project is a Tentative Map to subdivide 89.88 acres into four parcels plus a remainder parcel.	07-0082675	89.88	Old River Road and Dentro de Lomas
167	Pfaff, tpm, 3 lots	Tentative parcel map to divide a 7.79 acre parcel into three residential lots of 2.5, 2.1 and 2.7 net acres (Parcels 1, 2 and 3 respectively). The site contains an existing single-family residence on proposed Parcel 1 that would be retained.	06-0061790	7.79	32010 Caminito Quieto
168	Kohne residence, rez	Withdrawn	05-0045714	--	Calle Oro Verde
169	Castle creek condominiums, gpa, spa, rez	The project is a General Plan Amendment, Specific Plan Amendment, and Tentative Map to change the existing Land Use Designations to (21) Specific Plan Area in order to increase the density from 1.29 to 1.37 to allow a Tentative Map to subdivide the site into 63 dwelling units.	05-0061049	--	8790 Old Castle Road

Source: Chen Ryan Associates; August 2012

6.2 Existing Plus Cumulative Projects Plus Project Roadway Network and Traffic Volumes

Intersection and roadway geometrics under Existing Plus Cumulative Projects Plus Project conditions were assumed to be largely identical to Existing conditions, with the following two (2) exceptions:

- SR-76 is widened to 4 lanes – currently under construction; and
- Pankey Road, north of SR-76 is constructed as a 2-lane roadway through construction associated with cumulative projects, and the need to provide direct access to those projects.

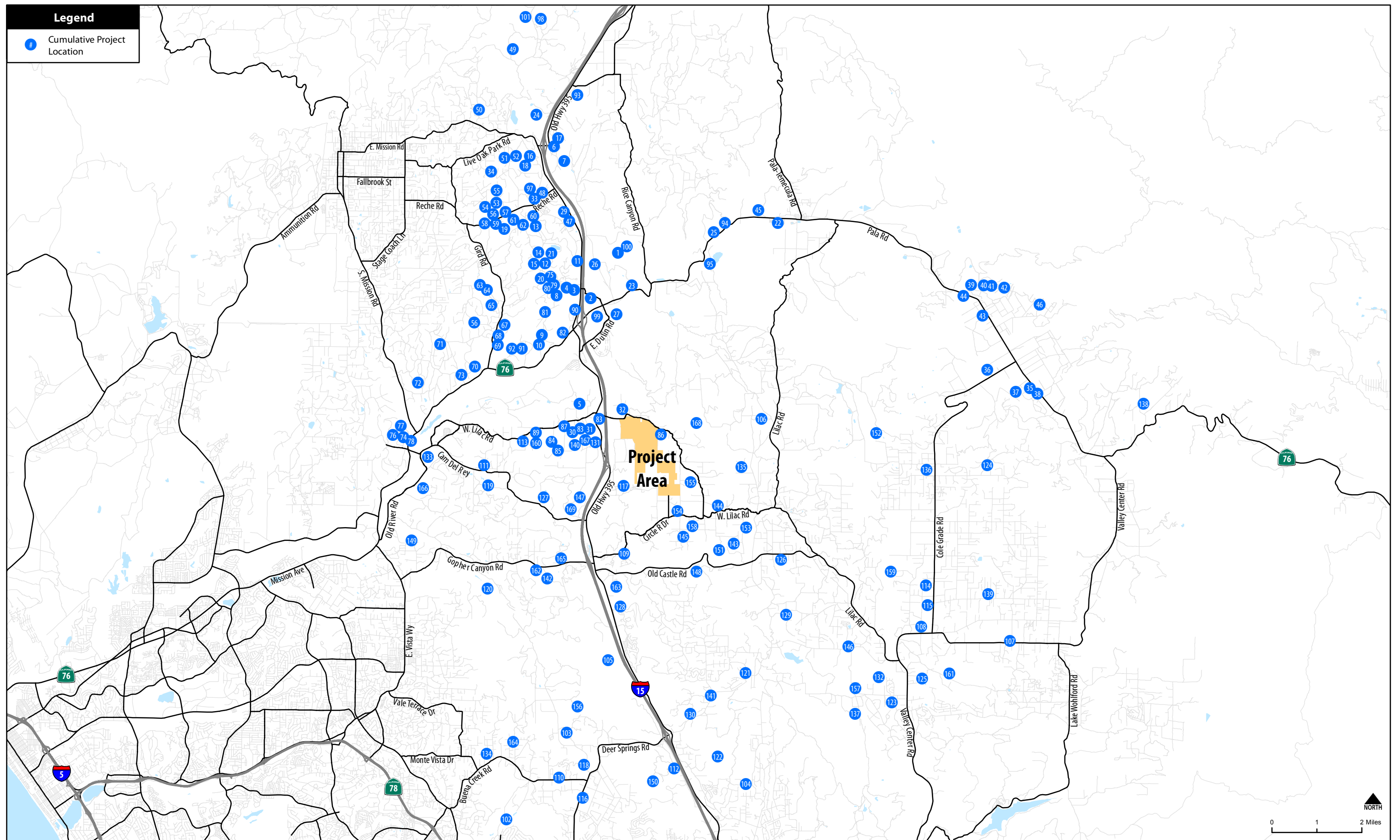


Figure 6-1
Cumulative Project Locations

Study area roadway and intersection geometrics are displayed in **Figures 6-2A** and **6-2B**, respectively. *It should be noted that, other than Pankey Road, this analysis did not assume any traffic mitigation and/or transportation system improvements by any of the anticipated cumulative land development projects. Based upon the project descriptions of a number of the cumulative projects, significant roadway improvements would in fact be forthcoming to satisfy CEQA requirements.*

Traffic volumes were developed by adding cumulative project traffic and the proposed project trip to Existing traffic volumes.

6.3 Existing Plus Cumulative Projects Plus Project Traffic Conditions

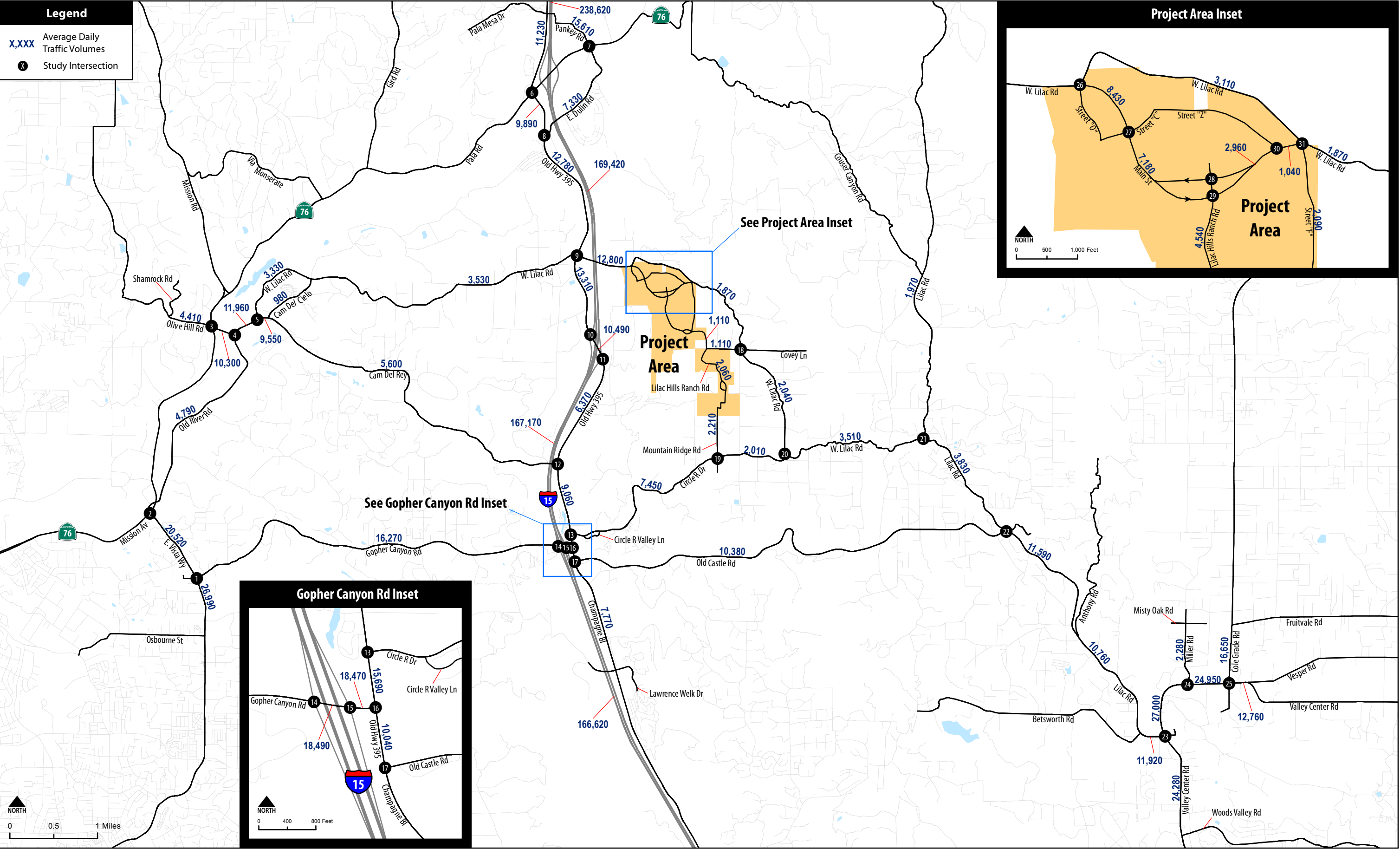
Level of service analyses under Existing Plus Cumulative Projects Plus Project conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 6-3A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 6-3B**.

Roadway Segment Analysis

Table 6.2 displays the level of service analysis results for key roadway segments under Existing Plus Cumulative Projects Plus Project conditions. As shown in the table, the following eight (8) roadway segments would continue to operate substandard LOS E or F:

- W. Lilac Road, between Old Highway 395 and Main Street – LOS F, and the cumulative projects plus the proposed project would add more than 100 daily trips.
- Camino Del Rey, between Old River Road and W. Lilac Road - LOS E, and the cumulative projects plus the proposed project would add more than 200 daily trips.
- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS F, and the cumulative projects plus the proposed project would add more than 100 daily trips.
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS F, and the cumulative projects plus the proposed project would add more than 100 daily trips.
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F, and the cumulative projects plus the proposed project would add more than 100 daily trips.
- Pankey Road, between Pala Mesa Drive and SR-76 - LOS F, and the cumulative projects would add more than 100 daily trips.
- Lilac Road, between Old Castle Road and Anthony Road - LOS E, and the cumulative projects plus the proposed project would add more than 200 daily trips.
- Cole Grade Road, between Fruitvale Road and Valley Center Road - LOS E, and the cumulative projects plus the proposed project would add more than 200 daily trips.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the proposed Lilac Hills Ranch project and the anticipated cumulative projects would result in cumulative impacts to all eight (8) roadway segments.

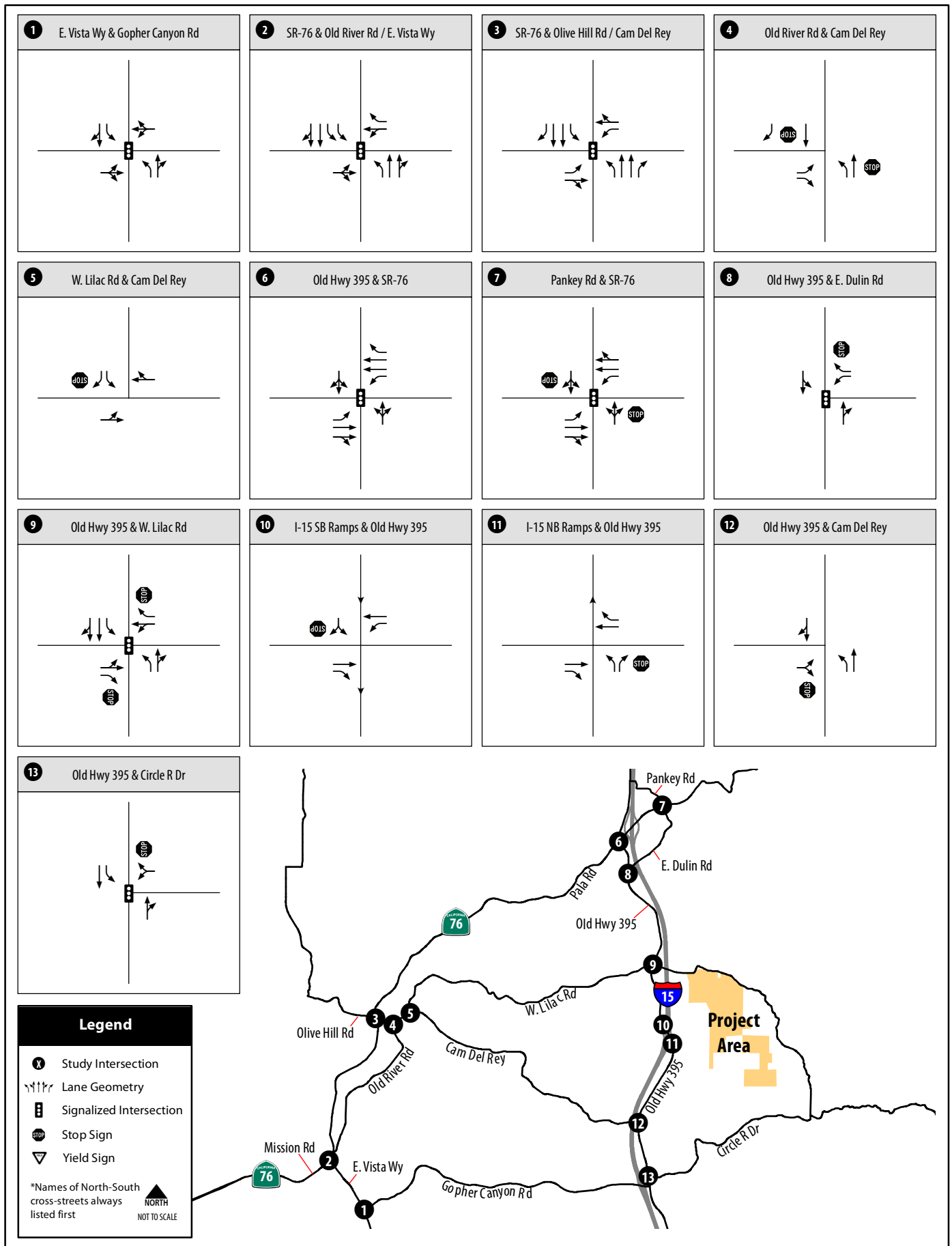


Lilac Hills Ranch Traffic Impact Study

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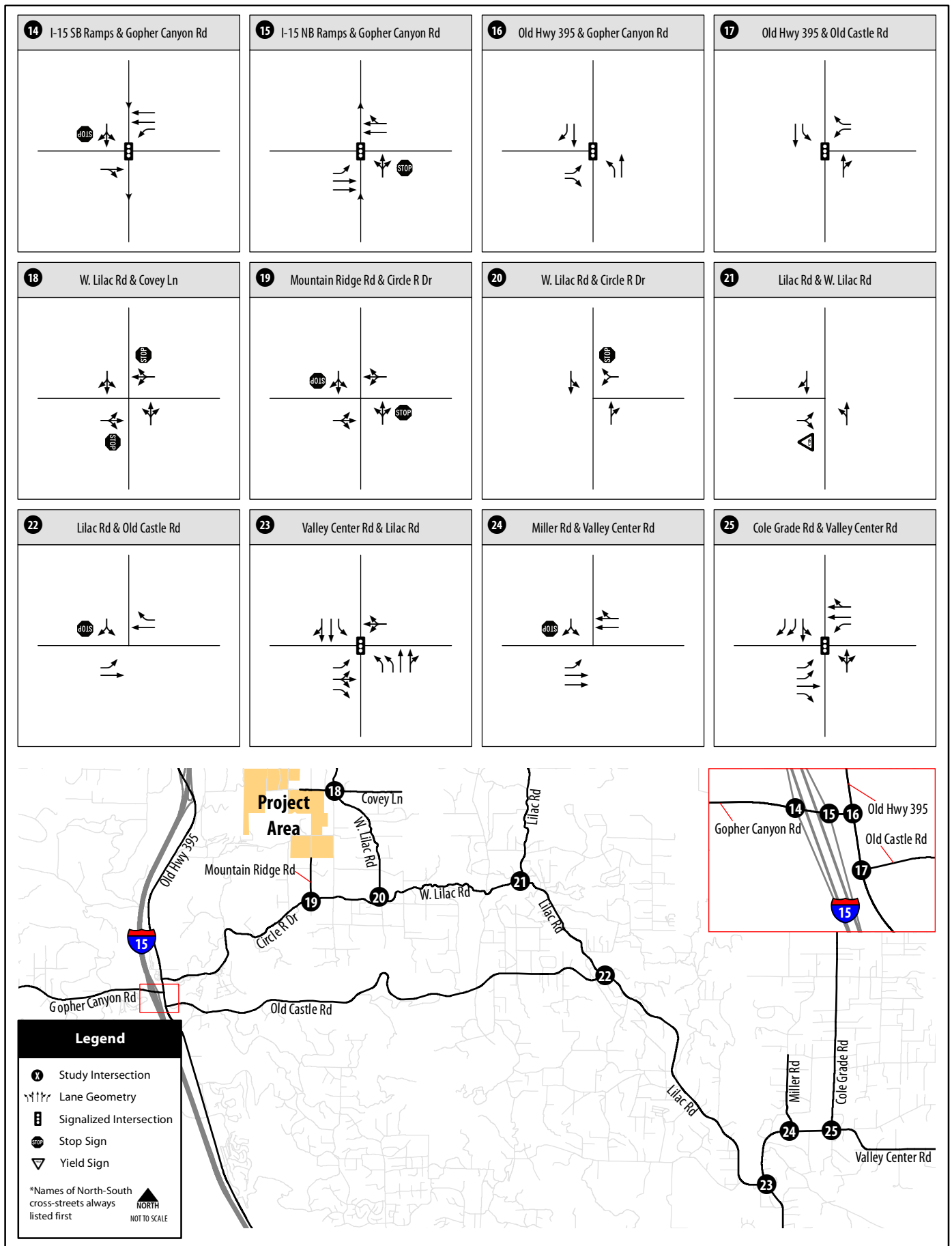
Figure 6-3A

Roadway Average Daily Traffic Volumes - Existing Plus Cumulative Projects Plus Project Conditions



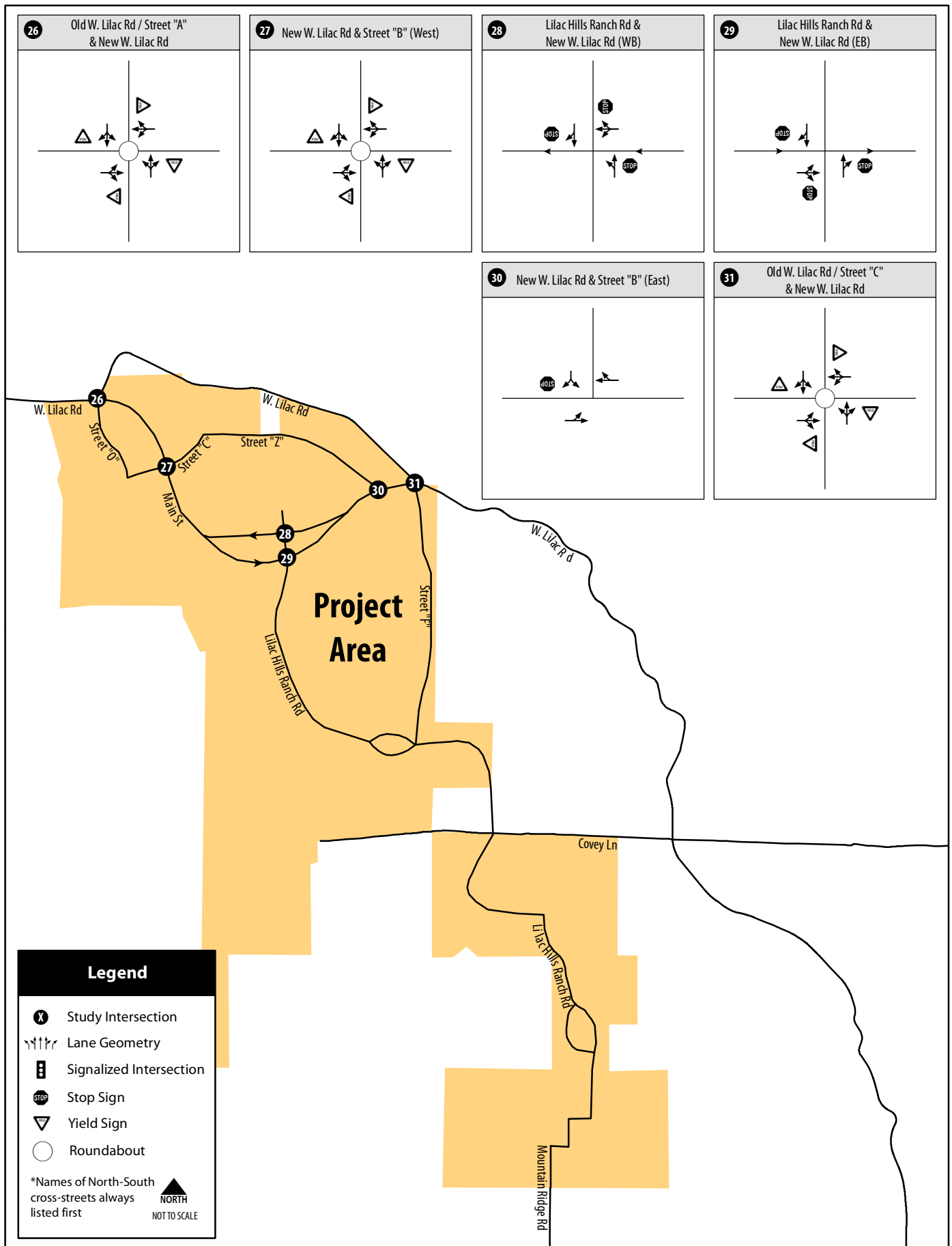
Lilac Hills Ranch Traffic Impact Study

Figure 6-2B (Intersections 1-13)



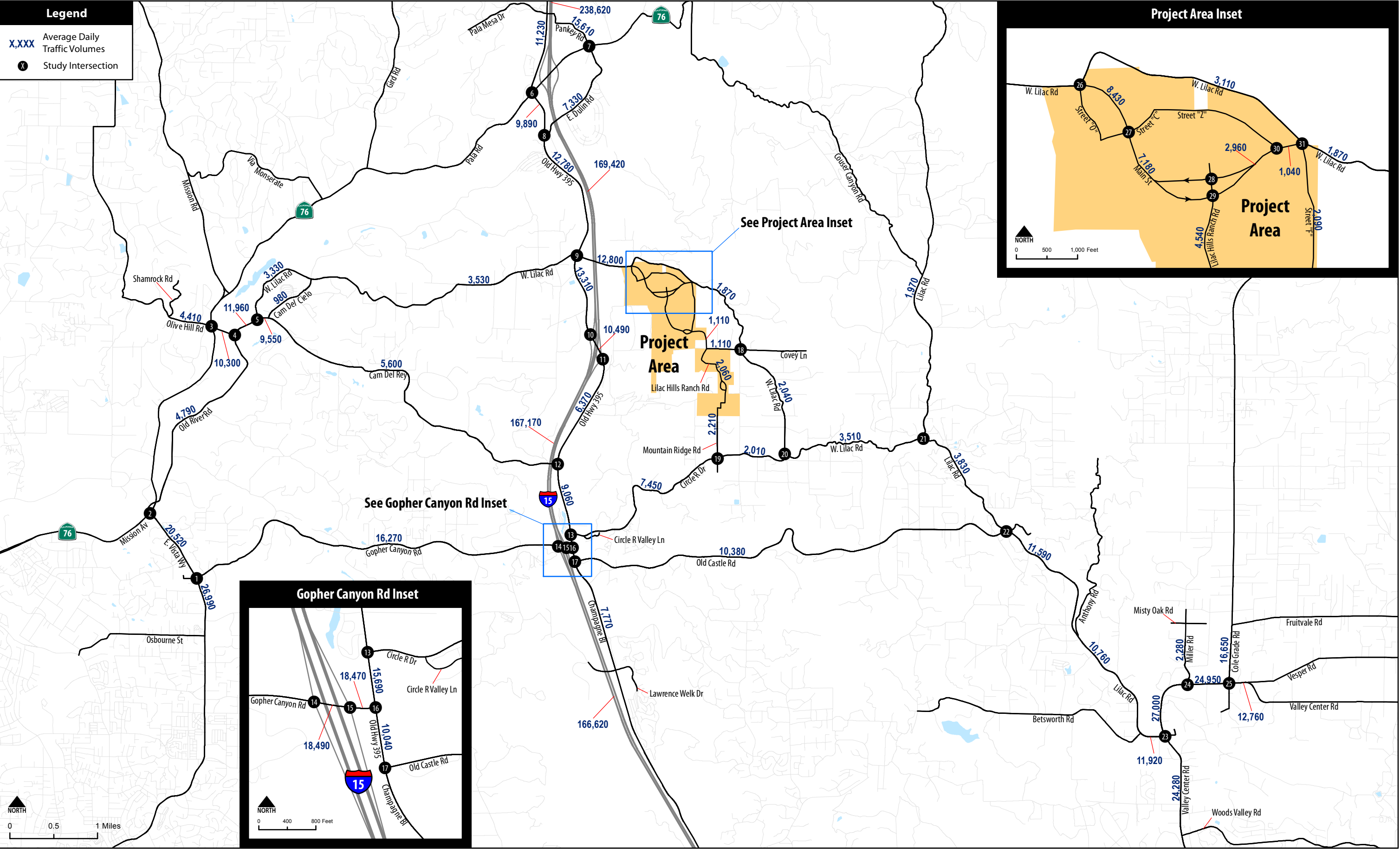
Lilac Hills Ranch Traffic Impact Study

Figure 6-2B (Intersections 14-25)



Lilac Hills Ranch Traffic Impact Study

Figure 6-2B (Intersections 24-31)

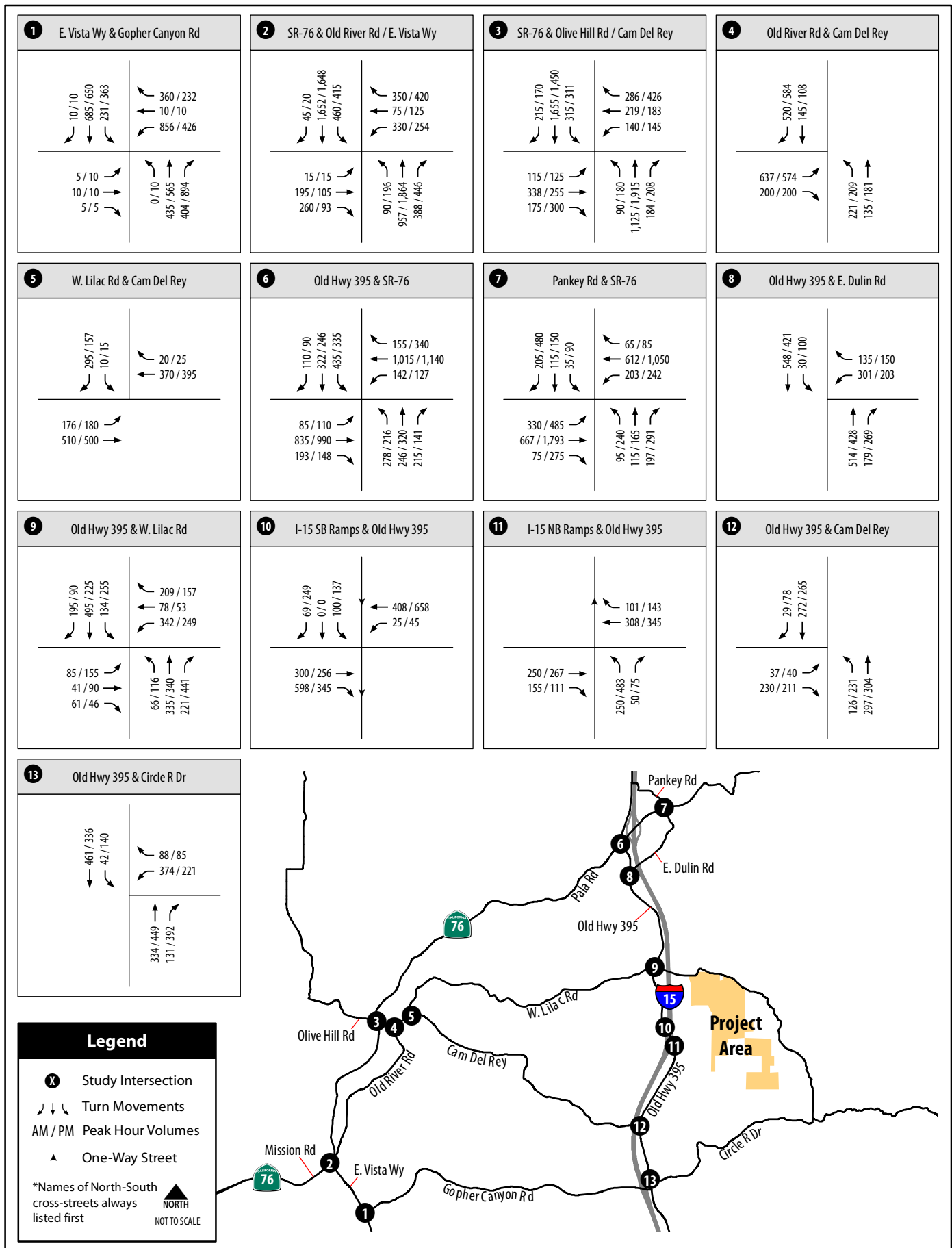


Lilac Hills Ranch Traffic Impact Study

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Figure 6-3A

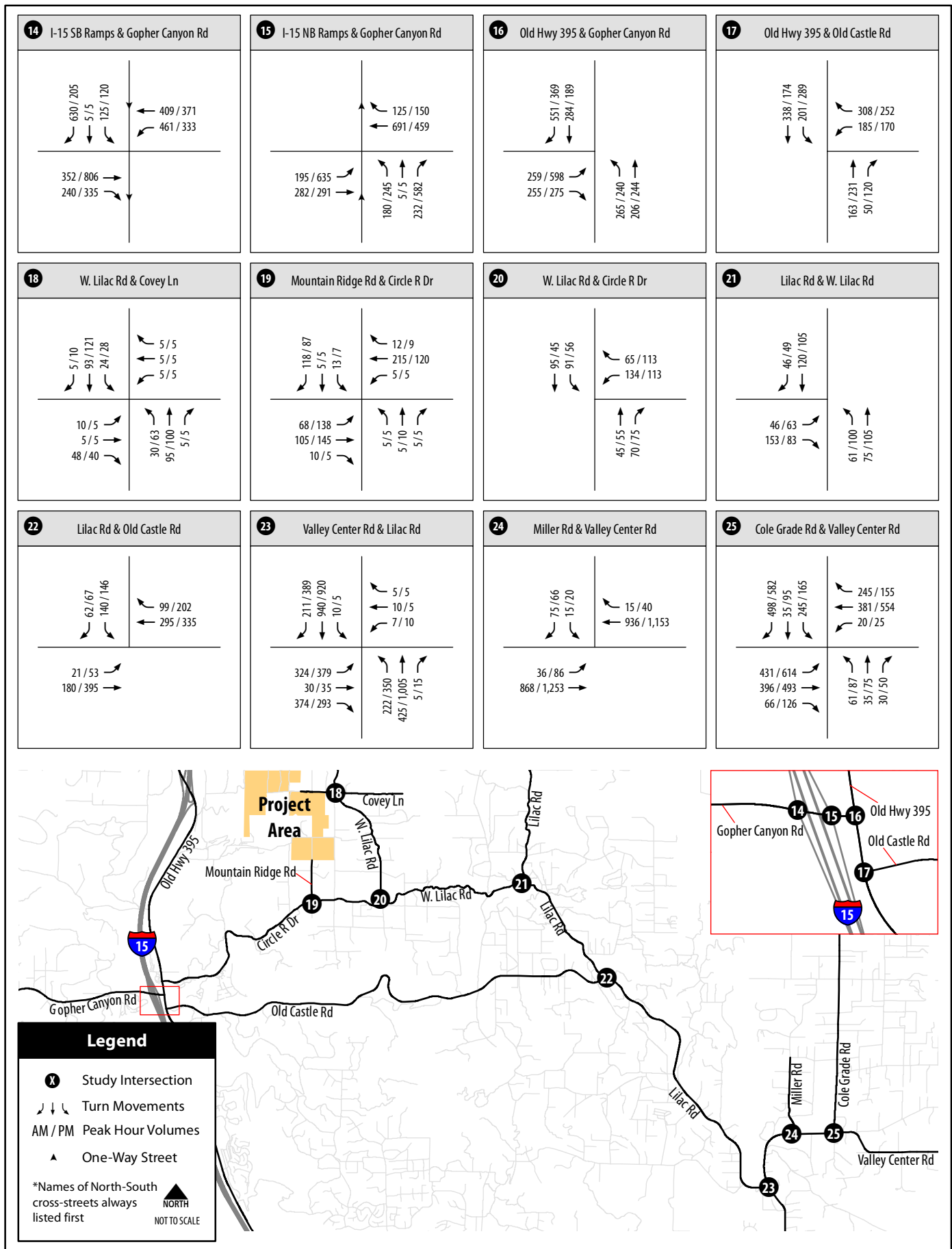
Roadway Average Daily Traffic Volumes - Existing Plus Cumulative Projects Plus Project Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 6-3B (Intersections 1-13)

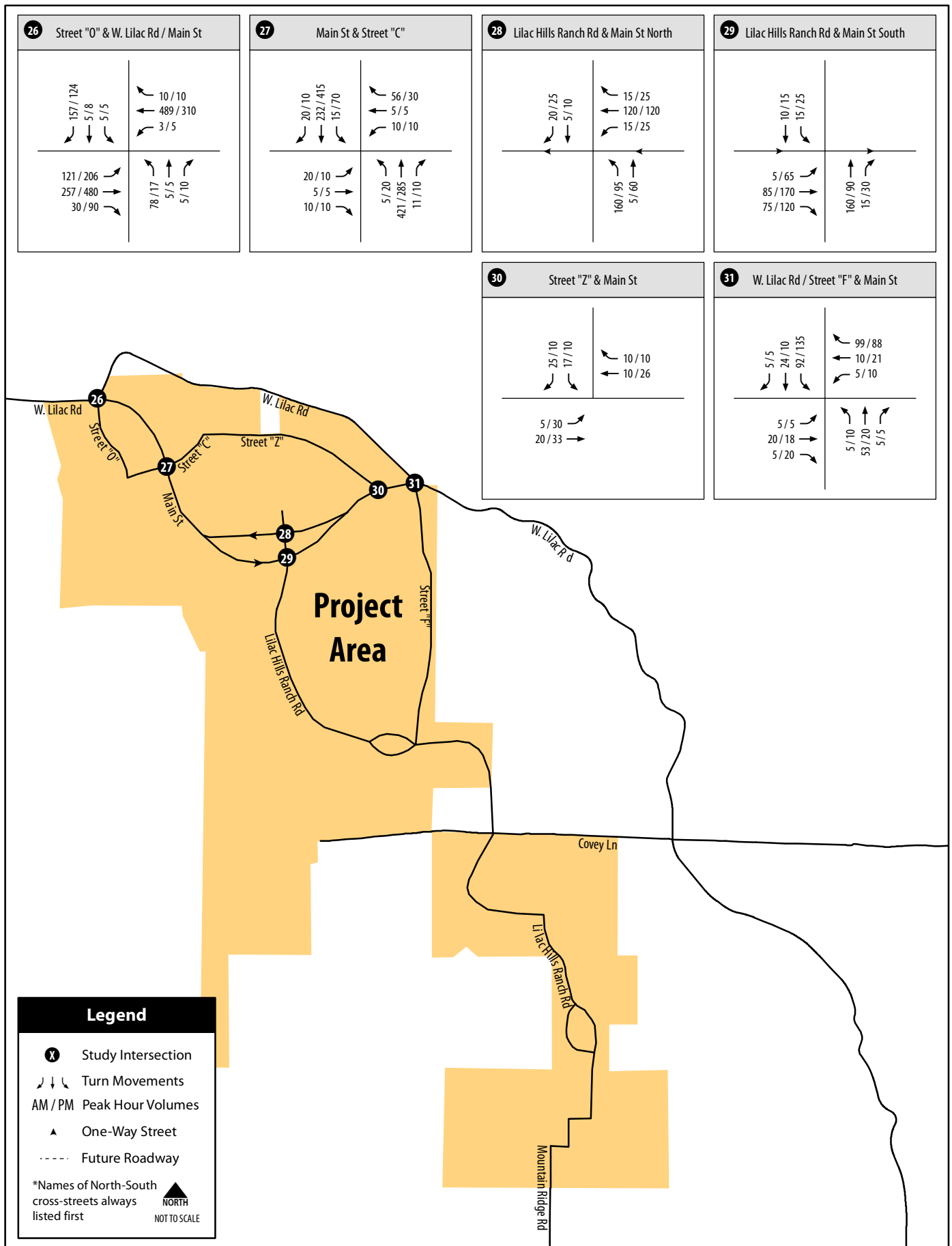
Intersection Peak Hour Traffic Volumes -
Existing Plus Cumulative Projects Plus Project Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 6-3B (Intersections 14-25)

Intersection Peak Hour Traffic Volumes - Existing Plus Cumulative Projects Plus Project Conditions



Lilac Hills Ranch Traffic Impact Study

Figure 6-3B (Intersections 26-31)

Intersection Peak Hour Traffic Volumes -
Existing Plus Cumulative Projects Plus Project Conditions

TABLE 6.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Roadway	From	To	With Cumulative Projects + Project				Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	10,900	7,330	D	1,830	A	5,500	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	8,700	3,330	A	2,270	A	1,060	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	8,700	3,530	A	2,140	A	1,390	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	12,800	F	1,150	A	11,650	Yes > 100ADT
W. Lilac Road	Main Street	Street "F"	2-Ln	8,700	3,110	A	1,150	A	1,960	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	8,700	1,870	A	1,150	A	720	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	8,700	2,040	A	480	A	1,560	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	8,700	3,510	A	1,170	A	2,340	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	980	A	630	A	350	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	4,410	A	3,380	A	1,030	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	10,300	D	9,350	D	950	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	10,900	11,960	E	8,640	D	3,320	Yes > 200ADT
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-Ln w/ SM	13,500	9,550	D	6,730	C	2,820	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	8,700	5,600	A	4,850	A	750	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	10,900	16,270	F	15,310	E	950	Yes > 100ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	18,490	B	12,390	A	6,100	No

TABLE 6.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Roadway	From	To	With Cumulative Projects + Project				Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	18,470	B	11,870	A	6,600	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	10,900	7,450	D	4,030	B	3,420	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	10,900	2,010	B	1,770	A	240	No
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	10,900	10,380	D	6,840	C	3,540	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	20,520	F	15,120	E	5,400	Yes > 100ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	26,990	F	21,020	F	5,970	Yes > 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	10,900	4,790	C	4,070	B	720	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	13,500	7,770	C	4,170	B	3,600	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	10,900	16,520	F	70	A	15,540	Yes > 100ADT
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	8,700	1,970	A	1,150	A	820	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	8,700	3,830	A	2,640	A	1,190	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	11,590	E	9,010	D	2,580	Yes > 200ADT
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	10,760	D	8,740	D	2,020	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	11,920	D	9,620	D	2,300	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	24,280	D	21,290	C	2,990	No

TABLE 6.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Roadway	From	To	With Cumulative Projects + Project				Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	27,000	C	24,280	B	2,720	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	24,950	D	22,440	C	2,510	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	12,760	D	11,490	D	1,270	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	8,000	2,280	A	1,460	A	820	No
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	16,650	E	10,660	D	5,990	Yes > 200ADT

Source: Chen Ryan Associates; June 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

RM = Raised Median.

SM = Striped Median.

TWLTL = Two-Way Left-Turn Lane.

Intersection Analysis

Table 6.3 displays intersection level of service and average vehicle delay results under Existing Plus Cumulative Projects Plus Project conditions. Level of service calculation worksheets are provided in **Appendix AC**. As shown in the table, the following fourteen (14) study intersections would operate at substandard LOS E or F under Existing Plus Cumulative Projects Plus Project conditions:

- E. Vista Way / Gopher Canyon Road (County) – LOS F during the PM peak hour, and the cumulative projects plus project traffic would add more than 1 second of additional delay to this signalized intersection.
- SR-76 / Old River Road/E. Vista Way (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative project plus project traffic would add two seconds or more of additional delay to this signalized intersection.
- SR-76 / Olive Hill Road/Camino Del Rey (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add two seconds or more of additional delay to this signalized intersection.
- Old River Road / Camino Del Rey (County) - LOS F during the AM peak hour, and the cumulative projects plus project traffic would not add more than 5 peak hour trips to the critical movement of this unsignalized intersection.
- SR-76 / Old Highway 395 (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add two seconds or more of additional delay to this signalized intersection.
- SR-76 / Pankey Road (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add two seconds or more additional delay to this unsignalized intersection.
- Old Highway 395 / E. Dulin Road (County) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.
- Old Highway 395 / W. Lilac Road (County) - LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.
- I-15 SB Ramps / Old Highway 395 (Caltrans) – LOS E during the AM peak hour and LOS F during the PM peak hour, and the cumulative projects plus project traffic would add two seconds or more additional delay to this unsignalized intersection.
- I-15 SB Ramps / Old Highway 395 (Caltrans) – LOS F during the PM peak hour, and the cumulative projects plus project traffic would add two seconds or more additional delay to this unsignalized intersection.
- Old Highway 395 / Circle R Drive (County) - LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	34.5	C	93.0	F	24.3 / 48.7	C / D	10.2 / <u>44.3</u>	-	Yes County Int. LOS Degrade & > 1 sec.
2. SR-76 / Old River Road/E. Vista Way	Signal	269.1	F	303.9	F	73.9 / 52.3	E / D	<u>195.2</u> / <u>251.6</u>	-	Yes Caltrans Int. > 2 sec.
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	231.9	F	363.0	F	43.6 / 60.8	D / E	<u>188.3</u> / <u>302.2</u>	-	Yes Caltrans Int. > 2 sec.
4. Old River Road / Camino Del Rey	OWSC	109.1	F	27.3	C	23.2 / 12.2	D / B	85.9 / 15.1	AM: NBL +3	No County Int. < 5 trips
5. W. Lilac Road / Camino Del Rey	OWSC	21.9	C	15.4	B	15.4 / 11.0	C / B	6.5 / 4.4	-	No
6. Old Highway 395 / SR-76	Signal	219.7	F	214.6	F	43.0 / 42.2	D / D	<u>176.7</u> / <u>172.4</u>	-	Yes Caltrans Int. > 2 sec.
7. Pankey Road / SR-76	TWSC	OVFL	F	OVFL	F	12.5 / 15.2	B / C	<u>OVFL</u> / <u>OVFL</u>	-	Yes Caltrans Int. > 2 sec.
8. Old Highway 395 / E. Dulin Road	OWSC	364.5	F	179.1	F	14.6 / 11.2	B / B	349.9 / 167.9	AM : WBL +89 PM : WBL +180	Yes County Int. > 5 trips

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
9. Old Highway 395 / W. Lilac Road	TWSC	OVFL	F	OVFL	F	18.5 / 13.3	C / B	OVFL / OVFL	AM : WBL +306 PM : WBL +233	Yes County Int. > 5 trips
10. I-15 SB Ramps / Old Highway 395	OWSC	41.3	E	213.8	F	10.6 / 12.1	B / B	<u>30.7 / 201.7</u>	-	Yes Caltrans Int. > 2 sec.
11. I-15 NB Ramps / Old Highway 395	OWSC	16.7	C	64.3	F	9.9 / 11.2	A / B	6.8 / <u>53.1</u>	-	Yes Caltrans Int. > 2 sec.
12. Old Highway 395 / Camino Del Rey	OWSC	14.4	B	19.4	C	10.1 / 11.0	B / B	4.3 / 8.4	-	No
13. Old Highway 395 / Circle R Drive	OWSC	347.6	F	529.5	F	20.4 / 22.5	C / C	327.2 / 507.0	AM : WBL +156 PM : WBL +107	Yes County Int. > 5 trips
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	2451.2	F	4522.3	F	468.2 / 173.0	F / F	<u>1983.0 / 4349.3</u>	-	Yes Caltrans Int. > 2 sec.
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	428.5	F	8370.3	F	30.5 / 1945.4	D / F	<u>398.0 / 6424.9</u>	-	Yes Caltrans Int. > 2 sec.
16. Old Highway 395 / Gopher Canyon Road	Signal	21.4	C	25.9	C	16.1 / 8.8	B / A	5.3 / 17.1	-	No
17. Old Highway 395 / Old Castle Road	Signal	14.0	B	17.9	B	13.9 / 15.7	B / B	0.1 / 2.2	-	No

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
18. W. Lilac Road / Covey Lane	TWSC	10.9	B	10.9	B	8.8 / 9.1	B / A	2.1 / 1.8	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	11.3	B	14.5	B	9.3 / 9.6	A / A	2.0 / 4.9	-	No
20. W. Lilac Road / Circle R Drive	OWSC	13.1	B	11.5	B	9.3 / 9.3	A / A	3.8 / 2.2	-	No
21. Lilac Road / W. Lilac Road	OWSC	11.1	B	12.0	B	9.6 / 9.9	A / A	1.5 / 2.1	-	No
22. Lilac Road / Old Castle Road	OWSC	17.0	B	32.6	D	11.8 / 17.8	B / C	5.2 / 14.8	-	No
23. Valley Center Rd / Lilac Road	Signal	38.9	D	52.7	D	10.5 / 22.6	B / C	28.4 / 30.1	-	No
24. Miller Road / Valley Center Road	OWSC	23.3	C	103.0	F	16.9 / 25.2	C / D	6.4 / 77.8	PM : SB +29	Yes County Int. > 5 trips
25. Cole Grade Road / Valley Center Road	Signal	36.6	D	48.8	D	31.1 / 34.9	C / C	5.5 / 13.9	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	10.3	B	14.0	B	DNE	DNE	10.3 / 14.0	-	No
27. Main Street / Street "C"	RA	7.2	A	8.2	A	DNE	DNE	7.2 / 8.2	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.5	A	8.5	A	DNE	DNE	8.5 / 8.5	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	8.3	A	9.7	A	DNE	DNE	8.3 / 9.7	-	No
30. Street "Z" / Main Street	OWSC	8.7	A	9.0	A	DNE	DNE	8.7 / 9.0	-	No

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
31. W. Lilac Road/Street "F" / Main Street	RA	4.4	A	4.5	A	DNE	DNE	4.4 / 4.5	-	No

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E of F.

AWSC = All-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

OWSC = One-Way Stop Controlled.

RA = Roundabout.

DNE = Does Not Exist.

For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

-
- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than two seconds of additional delay to this unsignalized intersection.
 - I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hour, and the cumulative projects plus project traffic would add more than two seconds of additional delay to this unsignalized intersection.
 - Miller Road / Valley Center Road (County) – LOS F during the PM peak hour, and the cumulative projects plus project would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the proposed Lilac Hills Ranch project and the other anticipated cumulative projects would result in cumulative impacts at all above mentioned intersections except for the intersection of Old River Road and Camino Del Rey.

Two-Lane Highway Analysis

Table 6.4 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Cumulative Projects Plus Project conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would operate at acceptable LOS D or better under Existing Plus Cumulative Projects Plus Project conditions and the additional traffic generated by the proposed Lilac Hills Ranch project and the other anticipated cumulative projects would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 6.5** displays the resulting level of service for I-15 under Existing Plus Cumulative Projects Plus Project conditions.

As shown in the table, eight (8) of the I-15 freeway segments would operate at substandard LOS E or F under Existing Plus Cumulative Projects Plus Project conditions:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and SR-76 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-76 and Old Highway 395 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;

TABLE 6.4
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

2-Ln Highway	From	To	With Cumulative Projects + Project			Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	11,230	D or better	4,770	D or better	6,460	No
Old Highway 395	SR-76	E. Dulin Road	16,200	9,890	D or better	4,720	D or better	5,170	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	12,780	D or better	4,340	D or better	8,440	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	13,310	D or better	4,450	D or better	8,860	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	10,490	D or better	3,600	D or better	6,890	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	6,370	D or better	2,430	D or better	3,940	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	9,060	D or better	5,820	D or better	3,240	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	15,690	D or better	10,710	D or better	4,980	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	10,040	D or better	8,660	D or better	1,380	No

Source: Chen Ryan Associates; January 2013

TABLE 6.5
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Cumulative Impact?
I-15	Riverside County Boundary to Old Highway 395	202,880	8.4%	17,140	0.64	4	0.95	6.75%	2,963	1.261	F	0.428	<i>Yes > 0.01</i>
I-15	Old Highway 395 to SR-76	238,620	7.4%	17,751	0.73	4	0.95	6.75%	3,532	1.503	F	0.659	<i>Yes > 0.01</i>
I-15	SR-76 to Old Highway 395	169,420	7.8%	13,252	0.69	4	0.95	8.40%	2,491	1.060	F	0.353	<i>Yes > 0.01</i>
I-15	Old Highway 395 to Gopher Canyon Road	167,170	8.1%	13,501	0.67	4	0.95	8.40%	2,472	1.052	F	0.360	<i>Yes > 0.01</i>
I-15	Gopher Canyon Road to Deer Springs Road	166,620	8.1%	13,456	0.67	4	0.95	13.20%	2,521	1.073	F	0.319	<i>Yes > 0.01</i>
I-15	Deer Springs Road to Centre City Parkway	166,030	8.0%	13,339	0.66	4	0.95	13.20%	2,486	1.058	F	0.312	<i>Yes > 0.01</i>
I-15	Centre City Parkway to El Norte Parkway	157,230	8.0%	12,632	0.66	4	0.95	13.20%	2,354	1.002	F	0.295	<i>Yes > 0.01</i>
I-15	El Norte Parkway to SR-78	171,220	7.9%	13,477	0.66	4	0.95	10.00%	2,476	1.053	F	0.272	<i>Yes > 0.01</i>
I-15	SR-78 to W Valley Parkway	216,870	8.1%	17,650	0.60	5+2ML	0.95	10.00%	1,672	0.711	C	0.082	No
I-15	W Valley Parkway to Auto Parkway	199,490	8.1%	16,235	0.60	5+2ML	0.95	10.00%	1,538	0.654	C	0.067	No
I-15	Auto Parkway to W Citracado Parkway	191,330	7.8%	14,839	0.60	5+2ML	0.95	10.00%	1,397	0.595	B	0.060	No
I-15	W Citracado Parkway to Via Rancho Parkway	208,340	7.8%	16,158	0.60	5+2ML	0.95	7.00%	1,500	0.638	C	0.038	No

TABLE 6.5
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Cumulative Impact?
I-15	Via Rancho Parkway to Bernardo Drive	238,480	7.4%	17,551	0.58	5+2ML	0.95	7.00%	1,580	0.672	C	0.114	No
I-15	Bernardo Drive to Rancho Bernardo Road	213,610	7.4%	15,721	0.58	5+2ML	0.95	7.00%	1,415	0.602	B	0.036	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	215,140	7.3%	15,795	0.54	5+2ML	0.95	7.00%	1,318	0.561	B	0.016	No
I-15	Bernardo Center Drive to Camino Del Norte	216,170	7.3%	15,871	0.54	5+2ML	0.95	7.00%	1,324	0.563	B	0.006	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01; and
- I-15, between El Norte Parkway and SR-78 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the proposed Lilac Hills Ranch project and the other anticipated cumulative projects would result in cumulative impacts at all eight (8) I-15 freeway segments identified above.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Cumulative Projects Plus Project conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 6.6** and analysis worksheets are provided in **Appendix AD**.

TABLE 6.6
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,884	>1500: (Over Capacity)
	PM	1,996	>1500: (Over Capacity)
SR-76 / Olive Hill Road/Camino Del Rey	AM	2,163	>1500: (Over Capacity)
	PM	2,558	>1500: (Over Capacity)
SR-76 / Old Highway 395	AM	2,262	>1500: (Over Capacity)
	PM	2,044	>1500: (Over Capacity)

Source: Chen Ryan Associates; January 2013

As shown in the table, all three (3) signalized intersections along SR-76 would operate at "Over Capacity" during both the AM and PM peak hours under the Existing Plus Cumulative Projects Plus Project conditions.

6.4 Existing Plus Cumulative Projects Plus Project Impact Significance and Mitigation

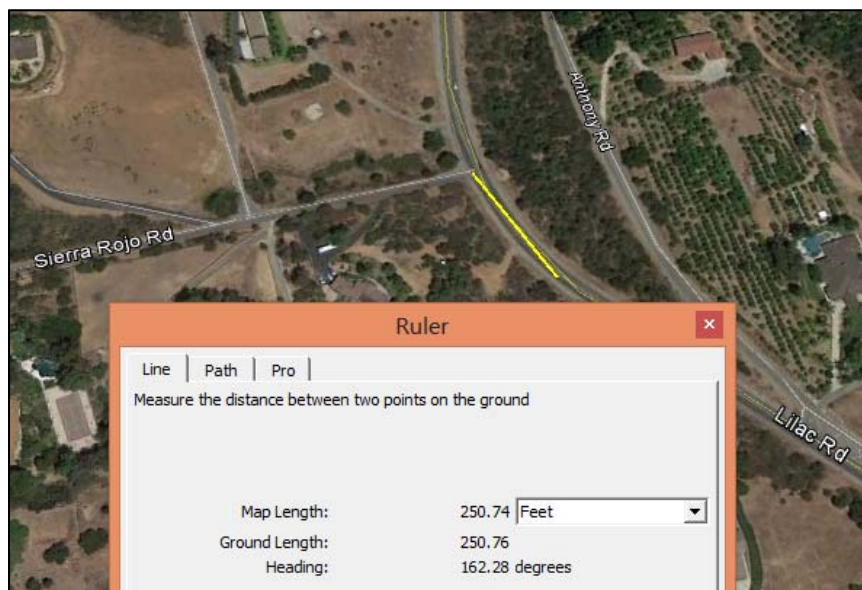
This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Cumulative Projects Plus Project conditions.

Roadway Segments

The total traffic generated by anticipated cumulative projects and the proposed project would result in cumulative impacts at eight (8) of the study area roadway segments. The following improvements would be required to mitigate the identified cumulative impacts:

- *W. Lilac Road, between Old Highway 395 and Main Street* – improve to the General Plan Mobility Element classification of 2.2C. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. This cumulatively impacted roadway segment would operate at LOS D with the roadway widening.
- *Camino Del Rey, between Old River Road and W. Lilac Road* - improve to the General Plan Mobility Element classification of 4.2B. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. This cumulatively impacted roadway segment would operate at LOS A with the roadway widening.
- *Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps* – improve to the General Plan Mobility Element classification of 4.1B. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. This cumulatively impacted roadway segment would operate at LOS B with the roadway widening.
- *E. Vista Way, between SR-76 and Gopher Canyon Road* – improve to the General Plan Mobility Element classification of 4.1A. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. This cumulatively impacted roadway segment would operate at LOS B with the roadway widening.
- *E. Vista Way, between Gopher Canyon Road and Osborne Street* – improve to the General Plan Mobility Element classification of 4.1A. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. This cumulatively impacted roadway segment would operate at LOS C with the roadway widening.
- *Pankey Road, between Pala Mesa Drive and SR-76* – improve to 4.2B and this would exceed the General Plan Mobility Element classification designation of 2.1A. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. This cumulatively impacted roadway segment would operate at LOS A with the roadway widening.
- *Lilac Road, between Old Castle Road and Anthony Road* - improve to the General Plan Mobility Element classification of 2.1C. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. In the case such a Plan or Program is not in place, as an alternative mitigation to the cumulative impact at this segment, the project applicant would construct intermittent turn lanes at major access locations along Lilac Road,

identified as 1) the segment between Robles Lane and Cumbres Road; and 2) the intersection at Sierra Rojo Road and Lilac Road. Turn lane/pocket at these locations will eliminate left turning vehicles from blocking through traffic in the same direction, hence will increase roadway capacity and improve traffic operations. This cumulatively impacted roadway segment would operate at LOS D with the roadway widening.



- *Cole Grade Road, between Fruitvale Road and Valley Center Road* - improve to the General Plan Mobility Element classification of 4.2A. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program. This cumulatively impacted roadway segment would operate at LOS A with the roadway widening.

Table 6.7 displays level of service analysis results for the mitigated roadway segments under the Existing Plus Cumulative Projects Plus conditions. As shown, all of the cumulatively impacted roadway segments would operate at acceptable LOS D or better with implementation of the respective improvement measures.

TABLE 6.7
MITIGATED ROADWAY SEGMENT LEVEL OF SERVICE
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Roadway	Segment	ADT	LOS After Mitigation	LOS Before Mitigation
W. Lilac Road	Between Old Highway 395 and Main Street	12,800	D	F
Camino Del Rey	Between Old River Road and W. Lilac Road	11,960	A	E
Gopher Canyon Road	Between E. Vista Way and I-15 SB Ramps	16,270	B	F
E. Vista Way	Between SR-76 and Gopher Canyon Road	20,520	B	F
	Between Gopher Canyon Road and Osborne Street	26,990	B	F
Pankey Road	Between Pala Mesa Drive and SR-76	16,520	A	F
Lilac Road	Between Old Castle Road and Anthony Road	11,590	D	E
Cole Grade Road	Between Fruitvale Road and Valley Center Road	16,650	A	E

Source: Chen Ryan Associates; June 2013

Note: Bold letter indicates unacceptable LOS E or F.

Intersections

The total traffic generated by anticipated cumulative projects and the proposed project would result in cumulative impacts at thirteen (13) of the study area intersections. The following improvements would be required to mitigate the identified cumulative impacts:

- *E. Vista Way / Gopher Canyon Road* (County) – add one northbound through-lane, one northbound right-turn lane, and one southbound through-lane at the E. Vista Way approach, and convert the current westbound left-through-right shared lane to a through-right shared lane and add a dedicated westbound left-turn lane at the Gopher Canyon Road approach. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program.
- *SR-76 / Old River Road/E. Vista Way* (Caltrans) – add one northbound right-turn lane, one northbound through-lane, and one southbound through-lane at the SR-76 approach. Convert the current eastbound left-through-right shared lane to an eastbound through-right shared lane, add one dedicated eastbound left-turn lane, and

one dedicated eastbound right-turn lane at the Old River Road approach. Convert the current westbound left-through shared lane to a westbound right-through shared lane, and add dedicated two westbound left-turn lanes at the E. Vista Way approach. Convert the current traffic signal phasing from eastbound and westbound split phase to protective phase. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program.

- *SR-76 / Olive Hill Road/Camino Del Rey* (Caltrans) – add one northbound through-lane, one southbound through-lane, and one southbound left-turn lane at the SR-76 approach. Add one eastbound right-turn lane at the Olive Hill approach, and add one westbound right-turn lane at the Camino Del Rey approach. Convert the current traffic signal phasing from eastbound and westbound split phase to protective phase. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program.
- *SR-76 / Old Highway 395* (Caltrans) – convert the current northbound left-through-right shared lane to a northbound through-lane, add one dedicated northbound left-turn lane and one dedicated northbound right-turn lane at the Old Highway 395 northbound approach. Convert the current southbound left-through-right shared lane to a southbound through-right shared lane and add two dedicated southbound left-turn lanes at the Old Highway 395 southbound approach. Convert the current eastbound through-right shared lane to an eastbound through-lane, add one eastbound right-turn lane at the SR-76 approach. Convert the current traffic signal phasing from northbound and southbound split phasing to a protective phase. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program.
- *SR-76 / Pankey Road* (Caltrans) – Signalization would be required at this intersection to mitigate cumulative traffic impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in **Appendix AE**. Convert the current northbound left-through-right shared lane to a northbound through-lane, add two dedicated northbound left-turn lanes, and one dedicated northbound right-turn lane at the Pankey Road approach. Convert the current southbound left-through-right shared lane to a southbound through lane, add one dedicated southbound left-turn lane, and two dedicated southbound right-turn lanes with an overlap signal phasing at the Pankey Road approach. Convert the current eastbound through-right shared lane to a through-lane, add one dedicated eastbound left-turn lane and right-turn lane at the SR-76 EB approach. Convert the current westbound through-right shared lane to a westbound through lane and add one westbound right-turn lane at the SR-76 WB approach. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program.

-
- *Old Highway 395 / E. Dulin Road (County)* – Signalization would be required at this intersection to mitigate the cumulative impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in Appendix AE. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program.
 - *Old Highway 395 / W. Lilac Road (County)* – Signalization would be required at this intersection to mitigate the impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in Appendix AE. In addition, add one eastbound left-turn lane and one westbound left-turn lane at the W. Lilac Road approaches to provide protected phasing for the eastbound and westbound left-turn movements. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program.
 - *Old Highway 395 / Circle R Drive (County)* – Signalization would be required at this intersection to mitigate the impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in Appendix AE. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program.
 - *I-15 SB Ramps / Old Highway 395 (Caltrans)* – Traffic signal and one southbound right-turn lane would be required at this intersection to mitigate cumulative impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in Appendix AE. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program. A number of potential improvements such as such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigation the identified project impact at this location. Calculation worksheets for the various improvement analyses are included in **Appendix AF**.
 - *I-15 NB Ramps / Old Highway 395 (Caltrans)* – Traffic signal and a second northbound left-turn lane would be required at this intersection to mitigate cumulative impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed*

Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA), this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in Appendix AE. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program. A number of potential improvements such as such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigation the identified project impact at this location. Calculation worksheets for the various improvement analyses are included in Appendix AF.

- *I-15 SB Ramps / Gopher Canyon Road (Caltrans)* – Install traffic signal and convert the current southbound left-through-right shared lane to a left-through shared lane, and add one dedicated right-turn lane would be required at this intersection to mitigate cumulative impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in Appendix AE. In addition, add an eastbound through-lane at the Gopher Canyon Road approach. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program. A number of potential improvements such as such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigation the identified project impact at this location. Calculation worksheets for the various improvement analyses are included in Appendix AF.
- *I-15 NB Ramps / Gopher Canyon Road (Caltrans)* – Install traffic signal and convert the current northbound left-through-right shared lane to a left-through shared lane, and add one dedicated right-turn lane would be required at this intersection to mitigate cumulative impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet both the “Minimum Vehicular Volume” and the “Interruption of Continuous Traffic” warrants. The signal warrant worksheet for this intersection is provided in Appendix AE. The project applicant would be responsible for making a fair share contribution in which the improvement is a part of an approved Plan or Program. A number of potential improvements such as such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigation the identified project impact at this location. Calculation worksheets for the various improvement analyses are included in Appendix AF.
- *Miller Road / Valley Center Road (County)* - Signalization would be required at this intersection to mitigate the impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA)*, this intersection would meet the “Interruption of Continuous

Traffic” warrant. The signal warrant worksheet for this intersection is provided in Appendix AE. The project applicant would be responsible for making TIF payments or a fair share contribution in which the improvement is a part of an approved Plan or Program.

Table 6.8 displays level of service analysis results for the mitigated intersection under the Existing Plus Cumulative Project Plus Project conditions. Calculation worksheets for the intersection analysis are provided in Appendix AF.

TABLE 6.8
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	After Mitigation				Before Mitigation	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
1. E. Vista Way / Gopher Canyon Road	22.0	C	37.7	D	34.5 / 93.0	C / F
2. SR-76 / Old River Road/E. Vista Way	33.4	C	48.1	D	269.1 / 303.9	F / F
3. SR-76 / Olive Hill Road/Camino Del Rey	42.6	D	50.9	D	231.9 / 363.0	F / F
6. Old Highway 395 / SR-76	53.4	D	52.9	D	219.7 / 214.6	F / F
7. Pankey Road / SR-76	19.9	B	52.7	D	OVFL / OVFL	F / F
8. Old Highway 395 / E. Dulin Road	12.1	B	10.1	B	364.5 / 179.1	F / F
9. Old Highway 395 / W. Lilac Road	32.9	C	52.5	D	67.8 / 188.3	E / F
10. I-15 SB Ramps / Old Highway 395	5.0	A	7.7	A	41.3 / 213.8	E / F
11. I-15 NB Ramps / Old Highway 395	7.9	A	6.3	A	16.7 / 64.3	C / F
13. Old Highway 395 / Circle R Drive	18.5	B	15.8	B	347.6 / 529.5	F / F
14. I-15 SB Ramps / Gopher Canyon Road	41.4	D	17.0	B	2451.2 / 4522.3	F / F
15. I-15 NB Ramps / Gopher Canyon Road	13.0	B	40.0	D	428.5 / 8370.3	F / F
24. Miller Road / Valley Center Road	5.6	A	7.3	A	23.3 / 103.0	C / F

Source: Chen Ryan Associates; May 2013

Note: Bold letter indicates unacceptable LOS E or F.

As shown in Table 6.8, after implementation of the proposed mitigations, all impacted intersections would operate at acceptable LOS D or better during both the AM and PM peak hours under the cumulative traffic conditions.

Freeways

The total traffic generated by anticipated cumulative projects and the proposed project would have cumulative impacts at the following eight (8) freeway segments:

- I-15, between the Riverside County Boundary and Old Highway 395;

- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

According to the Regional Transportation Plan (RTP) 2050, I-15 between Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study. In addition, I-15 (north of SR-78) mainline widening is not currently anticipated, thus the cumulative impacts would remain significant and unmitigable.

Table 6.9 summarizes potential cumulative impacts and recommended mitigation measures associated with anticipated cumulative projects and the proposed Lilac Hills Ranch project.

TABLE 6.9
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Roadway Segment</i>		
W. Lilac Road, between Old Highway 395 and Main Street	Improve to 2.2C	County GP Mobility Element Designation
Camino Del Rey, between Old River Road and W. Lilac Road	Improve to 4.2B	County GP Mobility Element Designation
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	Improve to 4.1B	County GP Mobility Element Designation
E. Vista Way, between SR-76 and Gopher Canyon Road	Improve to 4.1A	County GP Mobility Element Designation
E. Vista Way, between Gopher Canyon Road and Osborne Street	Improve to 4.1A	County GP Mobility Element Designation
Pankey Road, between Pala Mesa Drive and SR-76	Improve to 4.2B, Exceed Mobility Element Designation of 2.1A	Cumulative projects may not be included in the GPU analysis.
Lilac Road, between Old Castle Road and Anthony Road	Improve to 2.1C	County GP Mobility Element Designation
<i>Intersection</i>		
1. E. Vista Way / Gopher Canyon Road	<ul style="list-style-type: none"> • +1NBT; +1NBR • +1SBT • Conversion of WB L-T-R shared lane to T-R shared lane & +1WBL 	-

TABLE 6.9
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

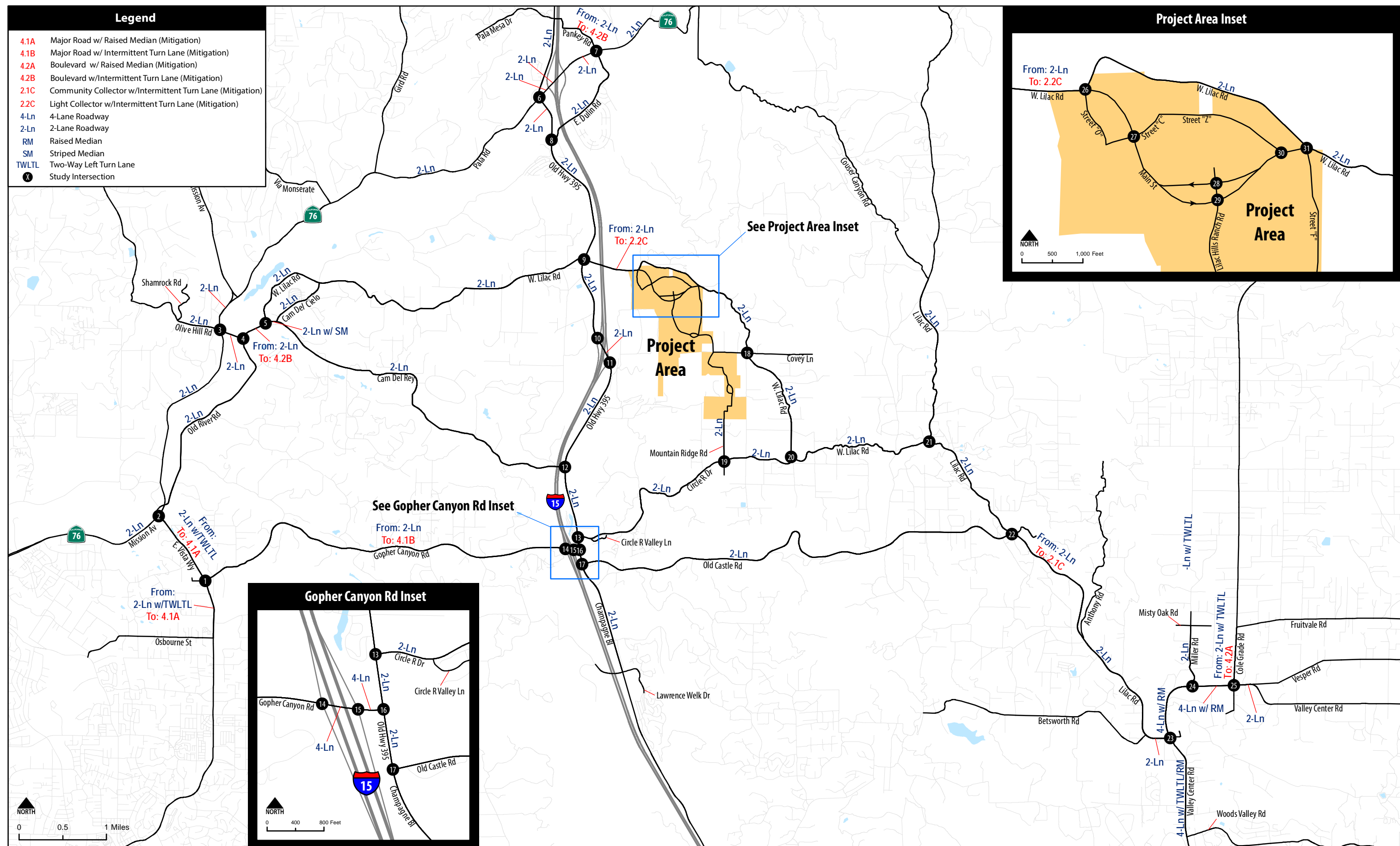
Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
2. SR-76 / Old River Road/E. Vista Way	<ul style="list-style-type: none"> • +1NBR & +1NBT • +1SBT • Conversion of EB L-T-R shared lane to EBTR shared lane & +1EBL & +1EBR • Conversion of WB L-T shared lane to WB T-R shared lane & +2WBL • Split to protected phase 	-
3. SR-76 / Olive Hill Road/Camino Del Rey	<ul style="list-style-type: none"> • +1NBT • +1SBT & +1SBL • +1EBR • +1WBR • Split to protected phase 	-
6. Old Highway 395 / SR-76	<ul style="list-style-type: none"> • Conversion of NB L-T-R shared lane to NBT & +1NBL & +1NB • Conversion of SB L-T-R shared lane to SB T-R shared lane & +2SBL • Conversion of EB T-R lane to EB T lane & +1EBR • Split to protected phase 	-
7. Pankey Road / SR-76	<ul style="list-style-type: none"> • Signalization • Conversion of NB L-T-R shared lane to NBT & +2NBL & +1NBR • Conversion of SB L-T-R shared lane to SBT & +1SBL & +2SBR (RTOL) • +1EBL; conversion of EB T-R shared lane to EBT & +1EBR • Conversion of WB T-R shared lane to WBT & +1WBR 	-
8. Old Highway 395 / E. Dulin Road	<ul style="list-style-type: none"> • Signalization 	-
9. Old Highway 395 / W. Lilac Road	<ul style="list-style-type: none"> • Signalization • +1EBL & +1WBL • Protected phase 	-
10. I-15 SB Ramps / Old Highway 395	<ul style="list-style-type: none"> • Signalization • +1SBR 	-
11. I-15 NB Ramps / Old Highway 395	<ul style="list-style-type: none"> • Signalization • +1NBL 	-
13. Old Highway 395 / Circle R Drive	<ul style="list-style-type: none"> • Signalization 	-

TABLE 6.9
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
14. I-15 SB Ramps / Gopher Canyon Road	<ul style="list-style-type: none"> • Signalization • +1EBT • +1SBR 	-
15. I-15 NB Ramps / Gopher Canyon Road	<ul style="list-style-type: none"> • Signalization • +1NBR 	-
24. Miller Road / Valley Center Road	<ul style="list-style-type: none"> • Signalization 	-
<i>Two-Lane Highway</i>		
None	-	-
<i>Freeway</i>		
I-15, between Riverside County Boundary and Old Highway 395	None	No planned improvement – no feasible mitigation
I-15, between Old Highway 395 and SR-76	None	No planned improvement – no feasible mitigation
I-15, between SR-76 and Old Highway 395	None	No planned improvement – no feasible mitigation
I-15, between Old Highway 395 and Gopher Canyon Road	None	No planned improvement – no feasible mitigation
I-15, between Gopher Canyon Road and Deer Springs Road	None	No planned improvement – no feasible mitigation
I-15, between Deer Springs Road and Centre City Parkway	None	No planned improvement – no feasible mitigation
I-15, between Centre City Parkway and El Norte Parkway	None	No planned improvement – no feasible mitigation
I-15, between El Norte Parkway and SR-78	None	No planned improvement – no feasible mitigation

Source: Chen Ryan Associates; May 2013

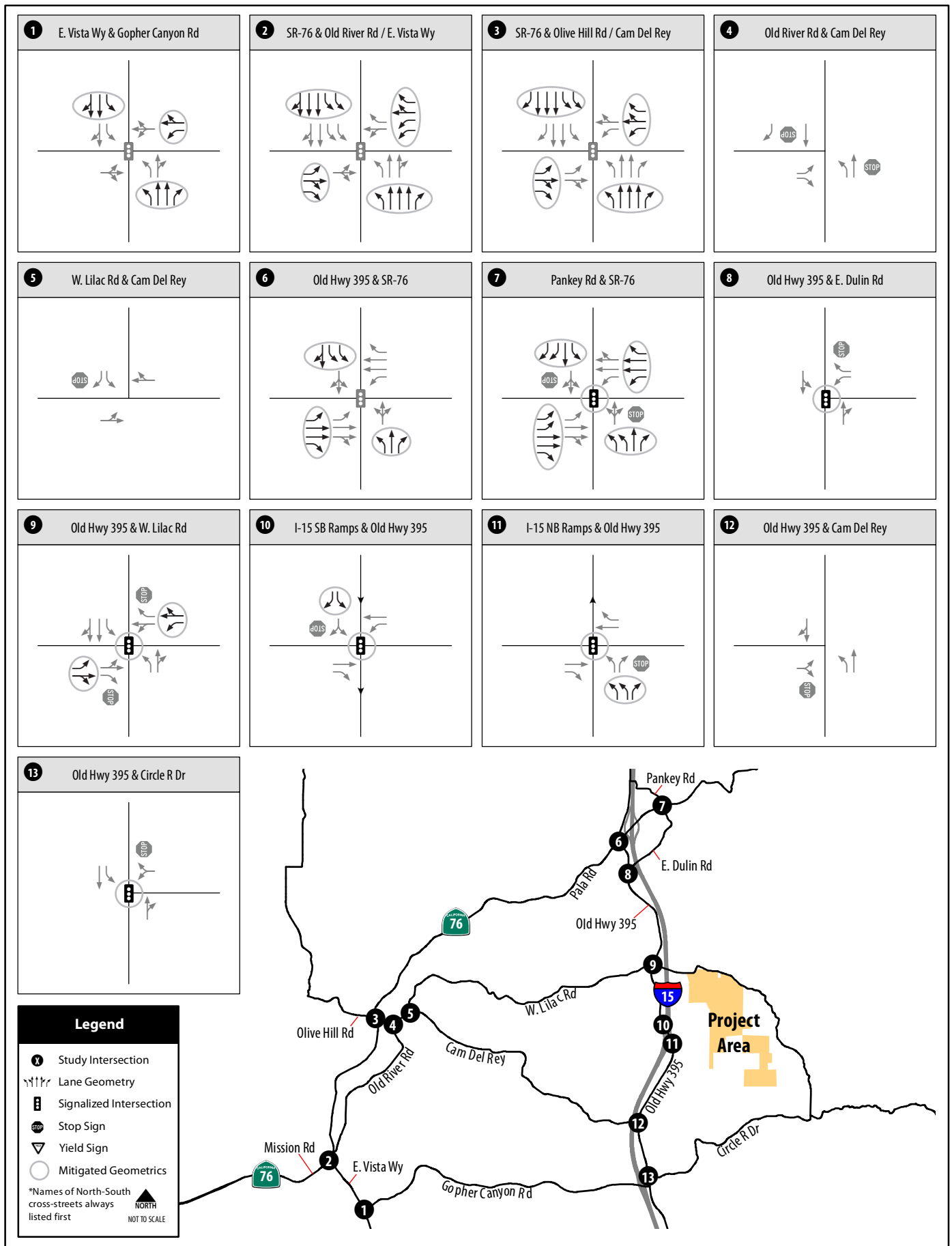
Figures 6-4A and 6-4B depict the recommend mitigation measures for study area roadways and intersections under Existing Plus Cumulative Projects Plus Project conditions, respectively.



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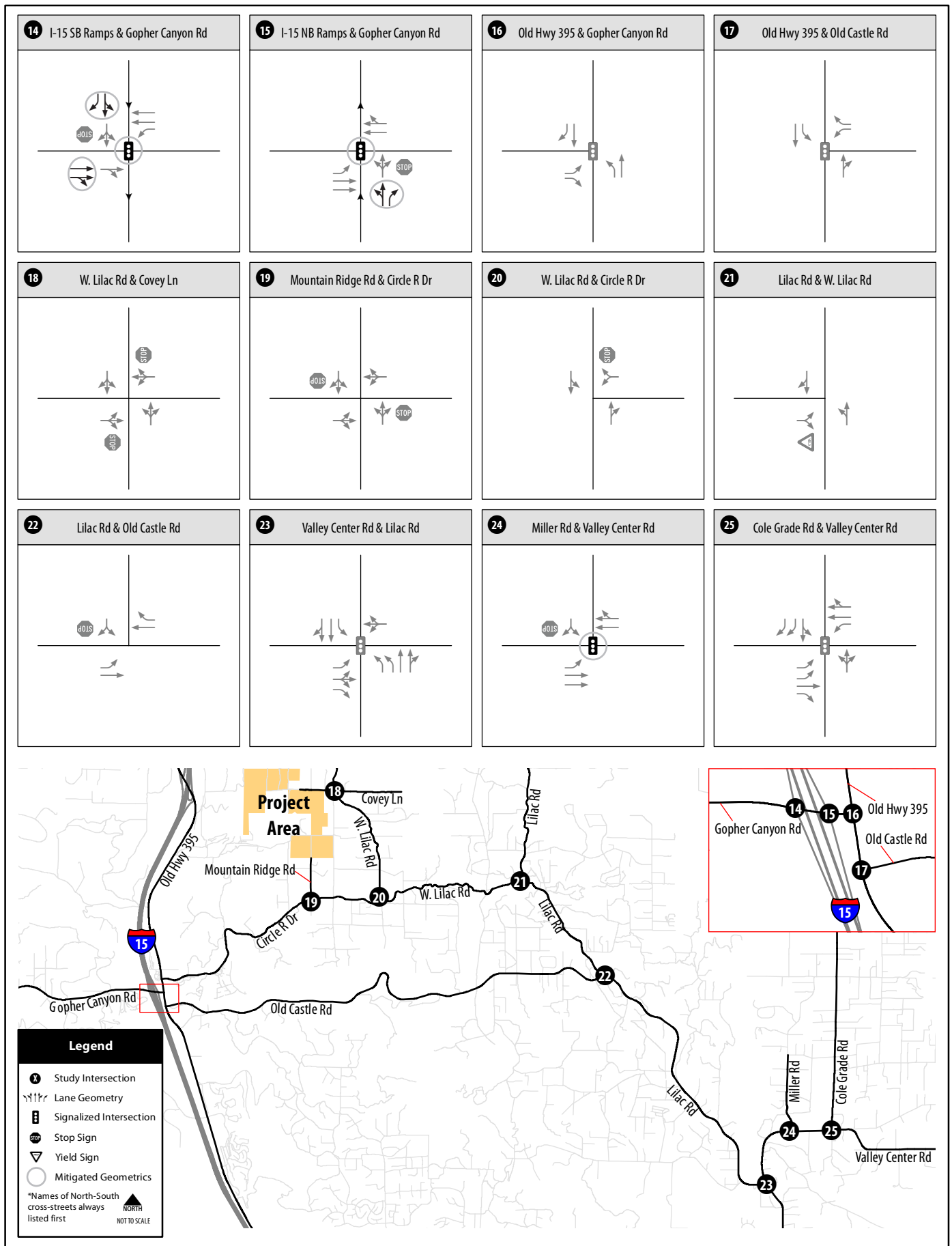
Figure 6-4A

**Recommended Mitigation Measures -
Existing Plus Cumulative Projects Plus Project Conditions**



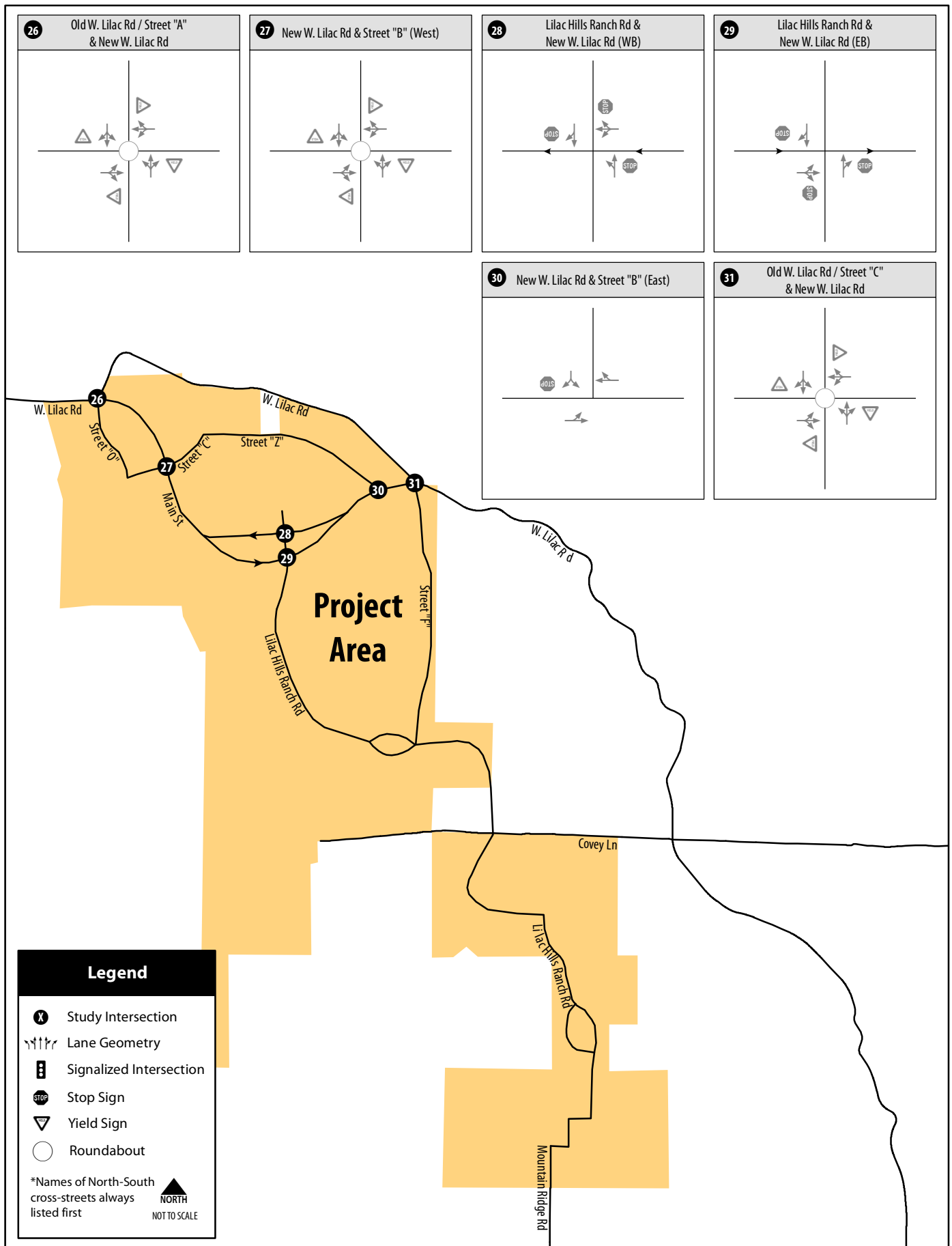
Lilac Hills Ranch Traffic Impact Study

Figure 6-4B (Intersections 1-13)



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Figure 6-4B (Intersections 14-25)



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Figure 6-4B (Intersections 24-31)

7.0 Site Access and On-Site Circulation

This chapter presents an assessment of transportation facilities providing access to the proposed project. It also recommends functional classifications for all roadways internal to the project.

7.1 Site Access

As previously shown in Figure 3-1A, six (6) access points (study intersections #26 through #31) to the north are provided along Main Street to W. Lilac Road. Traffic controls consist of single-lane roundabouts at study intersections #26, 27, and 31, all-way stop controls in the one-way couplet at study intersections #28 and 29, and a one-way stop controlled T-intersection at study intersection #30. Main Street is anticipated to serve as the primary access for project trips.

Project access to the east is provided via Covey Lane to W. Lilac Road (study intersection #18, stop controlled). Covey Lane provides unrestricted access to community north of Covey Lane and a restricted access to the senior community to the southern portion of the project.

Project access to the south is provided via Mountain Ridge Road to Circle R Drive (study intersection #19, stop controlled). The southern third of the project (south of Covey Lane) is a gated senior community with a gate just south of Covey Lane on Lilac Hills Ranch Road and another gate at the southern terminus of Lilac Hills Ranch Road just north of the proposed church site. Visitors to the Church during days of worship will also have access thru the northern gate of the senior community.

A secondary access is also provided via Birdsong Drive to W. Lilac Road. A gated emergency access is provided by Rodriguez Road.

Based upon a review of the project site utilization plan and conditions in the field, the following comments on site access are offered:

- Sight distance analyses were conducted at the intersections of Mountain Ridge Road / Circle R Drive (southern project access) and Covey Lane / W. Lilac Road (eastern project access) by the project Civil Engineer, Landmark Consulting. Technical memorandums with findings and recommendations will be submitted under a separated cover.
- The Project Civil Engineer, Landmark Consulting, will ensure that all proposed roundabouts are designed to meet applicable safety and design standards.
- Based on the analyses in the previous sections, all project access intersections/roundabouts (#18, 19, and 26-31) would operate at acceptable Levels of Service under the various study scenarios.

7.2 On-Site Circulation

A system of private roads, including Main Street, Lilac Hills Ranch Road, Street “F”, Mountain Ridge Road, and Covey Lane, is proposed to provide site access and on-site circulation for Lilac Hills Ranch.

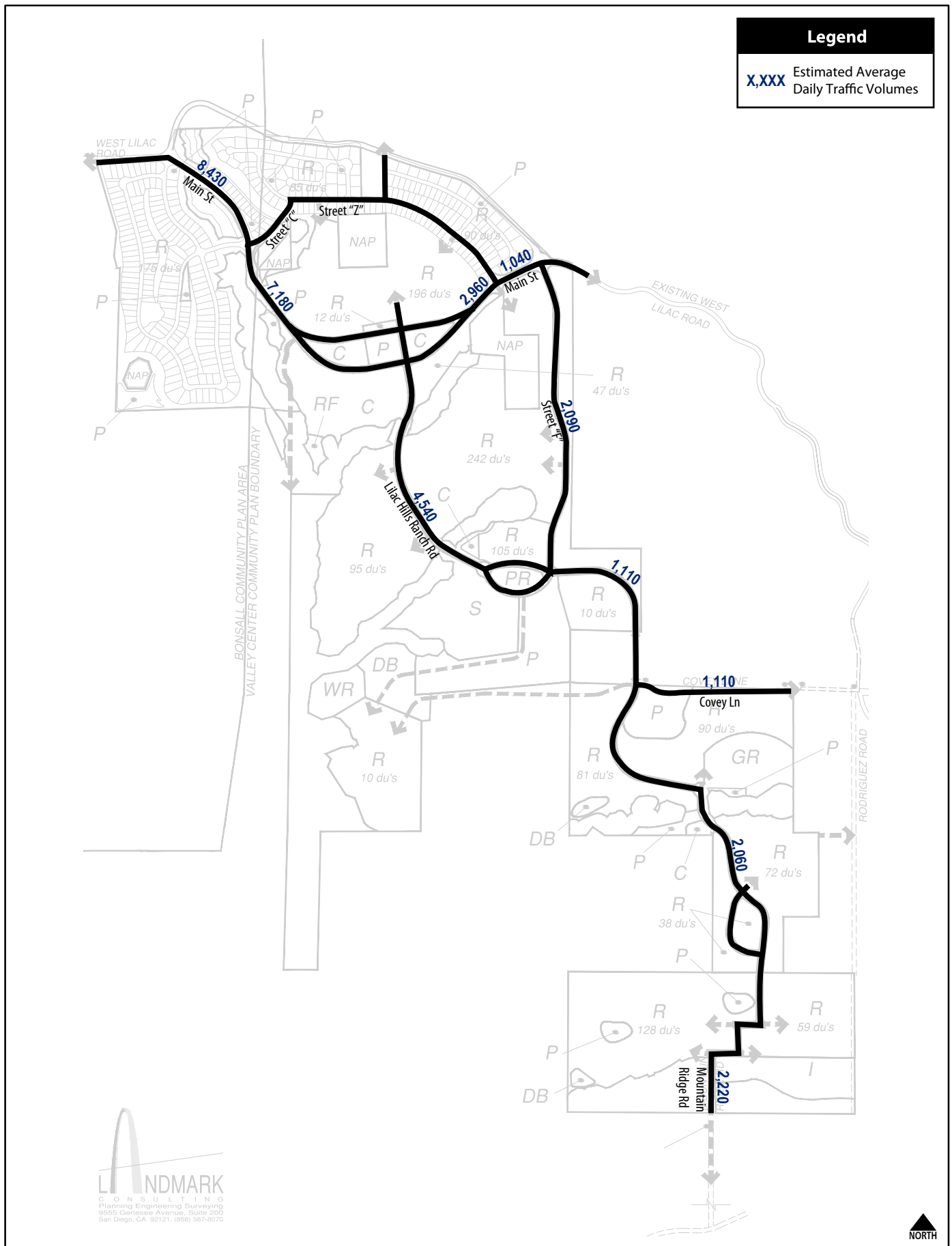
Main Street would serve as the primary access carrying approximately 6% to 56% (east to west) of the project trip. A small percent (6%) of the total project traffic would utilize Covey Lane given that only about 9% of the project trips are anticipated to travel east of the project site as per SANDAG’s Select Zone Assignments. Approximately 13.5% of the total project traffic would access Mountain Ridge Road as this access is gated north of the access to the institutional (church) site. The southern third of the project is a senior community with a gate between the main project and the senior community (at Covey Lane), as well as a gate at Lilac Hills Ranch Road/Mountain Ridge Road just north of the proposed church site. During days of worship, the northern gate at the senior community entrance will be opened to provide internal circulation and access for residents live on the north side of Covey Lane.

Based upon buildout of the proposed project land uses and trip generation, ADT volumes were estimated for the internal roadway segments within the Lilac Hills Ranch project site. Project trips were distributed and assigned to the internal roadway system based on the location and characteristics of the proposed land uses.

Figure 7-1 displays the resulting internal roadway ADTs. As shown, Mountain Ridge Road, Covey Lane, Street “F”, as well as portions of Lilac Hills Ranch Road and Main Street would carry less than 2,500 estimated daily trips. The County’s Private Road Design Standards Section 3.1 (D) states that *where it is determined that the number of trips per day on a particular road will exceed 2,500, the Director of Public Works may require that the road be dedicated and improved in conformance with the “County of San Diego Public Road Standards”*. The following roads are projected to carry more than this threshold:

- Main Street, between W. Lilac Road and Street “C” – 8,430 ADT;
- Main Street, between Street “C” and Lilac Hills Ranch Road – 7,180 ADT;
- Main Street, between Lilac Hills Ranch Road and Street “Z” – 2,960 ADT; and
- Lilac Hills Ranch Road, between Main Street and Street “F” – 4,450 ADT.

It is important to note that Section 1.2 of the County’s Private Road Design Standards indicates that *the requirements set forth in these standards are considered minimum design standards. They may be exceeded at the option of the developer, subject to the approval of the Director of Public Works.*



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Figure 7-1
Estimated Internal ADTs

Arterial speed analysis was conducted for Main Street and Lilac Hills Ranch Road and **Table 7.1** summarizes the results. Highway Capacity Software (HCS) 2000 developed by McTrans was employed for this analysis. The HCS arterial analysis methodology is based upon Chapter 15 of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to roadway functional classification and characteristics. The respective analysis worksheets are included in **Appendix AG**.

TABLE 7.1
INTERNAL ROADWAY ARTERIAL LEVEL OF SERVICE RESULTS

Arterial	ADT	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
			Travel Speed (mph)	LOS	Travel Speed (mph)	LOS
Main Street, between W. Lilac Road and Street "F"	8,430	30	24.2	B	17.8	C
Lilac Hills Ranch Road, between Main Street and Street "F"	4,540	30	24.2	B	19.0	B

Source: Chen Ryan Associates; January 2013

As shown in the table, both Main Street and Lilac Hills Ranch Road would operate at LOS C or better at project buildout.

In addition to the operational arterial analysis, **Table 7.2** was created to compare the design features of all on-site circulation/spine roads (private) to the County's private and public road standards.

TABLE 7.2
ON-SITE CIRCULATION / SPINE ROADS DESIGN FEATURES

Road	Classification / ADT	# Lanes / Lane Width	Road Surfacing Width	ROW/ Esmt. Width	Paved Shoulders (# / Width)	Min. Curve Radius	Max. Desirable Grade	Design / Observed Speed (mph)
Standard	Private / 2,500	2 / 12'	24'	28'	-	200'	20%	30
Standard	LPR, Residential Collector / 4,500	2 / 12'	40'	60'	2 / 8'	300'	12%	30
Standard	2.3C / 7,000	2 / 12'	40'	68'	2 / 8'	350'	12%	35
Standard	2.2F / 8,700	2 / 12'	28'	52'	2 / 2'	500'	9%	40
Standard	2.2E / 10,900	2 / 12'	40'	64'	2 / 8'	500'	9%	40
Main Street (excluding couplet)	Private / 1,040-8,430	2 / 12'	34'-42'	51'-77'	0'-8'	500'	9%	30
Lilac Hills Ranch Road (north of St "F", excluding couplet)	Private / 4,540	2 / 12'	26'-40'	40'-60'	0'-8'	500'	9%	30

TABLE 7.2
ON-SITE CIRCULATION / SPINE ROADS DESIGN FEATURES

Road	Classification / ADT	# Lanes / Lane Width	Road Surfacing Width	ROW/ Esmt. Width	Paved Shoulders (# / Width)	Min. Curve Radius	Max. Desirable Grade	Design / Observed Speed (mph)
Lilac Hills Ranch Road (St "F" to Covey Ln)	Private / 1,110	2 / 12'	26'-40'	40'-60'	0'-8'	300'	10%	30
Lilac Hills Ranch Road (Covey Ln to Mountain Ridge Rd)	Private / 2,060	2 / 12'	26'-40'	40'-60'	0'-8'	300'	10%	30
Street "F"	Private / 2,090	2 / 12'	26'-40'	26'-40'	0'-8'	300'	15%	25
Covey Lane (within project boundary)	Private / 1,110	2 / 12'	24'	26'-40'	0'-8'	200'	15%	25-30
Covey Lane (project boundary to WLR)	IOD / 1,110	2 / 12'	28'	40'-60'	2 / 2'	1,000'	6.2%	30 / 30
Mountain Ridge Road	Private / 2,260	2 / 12'	24'	40'	-	200'	20%	15 / 40

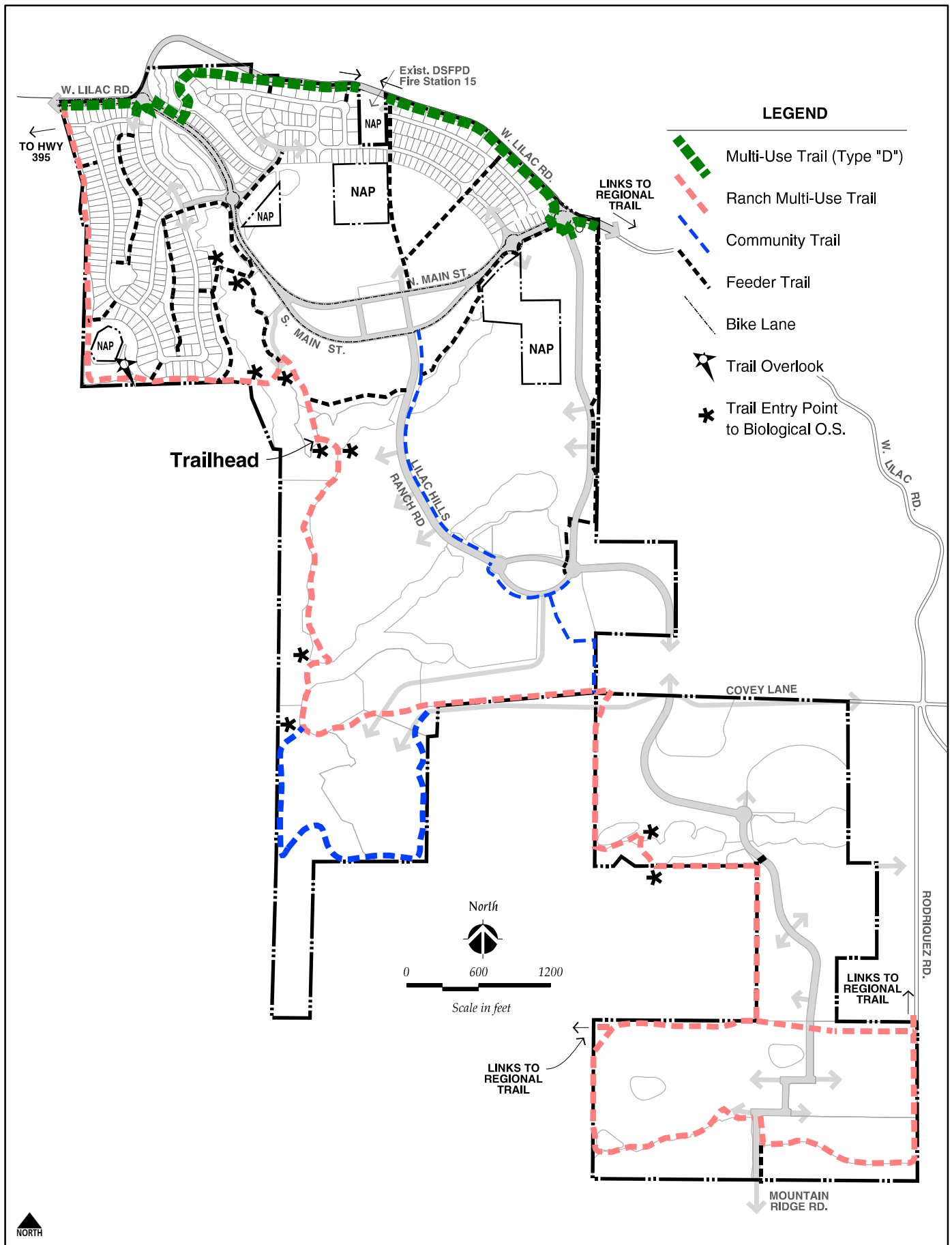
Source: Landmark Consulting, Chen Ryan Associates; January 2013

As shown, Lilac Hills Ranch Road south of Street "F", Street "F", Covey Lane, and Mountain Ridge Road meet and exceed all private road design requirements with estimated ADTs of 2,500 or less. Main Street and Lilac Hills Ranch Road north of Street "F" generally meet the design standards of 2.2E facilities, which have a capacity of 16,200 ADT (LOS D thresholds of 10,900 ADT). It is the project vision and desire to slow down traffic both through traffic calming measures (i.e. roundabouts) and design features (i.e. design speed) in the proposed town center and within the vicinity of the school and parks where high pedestrian activity is anticipated and encouraged.

8.0 Hazards to Pedestrians and Bicyclists

Lilac Hills Ranch currently has two east-west public trail segments, one along the northern boundary of the project site (W. Lilac Road) and the other along the most southern portion of the project. In addition to the two public trails, the Lilac Hills Ranch project proposes developing a system of multi-purpose trails that traverse the project site, linking the northern and southern public trails. The Lilac Hills Ranch's multi-purpose trails network will provide connectivity to parks, private recreation, schools, and commercial areas within the project site. The multi-purpose trail network is proposed as a combination of smaller feeder and natural trails in the open space area of Lilac Hills Ranch, and an 8-foot community pathway that traverses the project site providing connectivity to the existing County Regional Trail System. All trails should be designed to County standards approved by the County as set forth in the Specific Plan for the Project to ensure the safety of pedestrians and bicyclists. A map of the proposed trail network is displayed in **Figure 8-1**.

In addition to the trails system, a number of roundabouts are proposed along W. Lilac Road and Main Street. Roundabouts have been proven to calm traffic, improve safety, and increase roadway capacity when designed correctly, thereby enhancing the comfort and safety of both cyclists and pedestrians. The Project Civil Engineer, Landmark Consulting, will ensure that all proposed roundabouts are designed to meet applicable safety and design standards.



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Figure 8-1
Trails Plan

9.0 General Plan Consistency Analyses

This chapter provides two plan-to-plan analyses assessing potential traffic impacts to the County's General Plan Mobility Element roadways due to changes in the proposed project's land use, density, intensity, and/or network proposals. In addition to the proposed project land uses described in Chapter 4, *the Lilac Hills Ranch project also proposes to downgrade W. Lilac Road, between Main Street (the most western project roundabout) and the planned Road 3 from 2.2C to 2.2F*. The two plan-to-plan analyses include comparisons of, first, the proposed project and the currently adopted GP Mobility Element (with Road 3); and second, the proposed project and the reasonably expected network (without Road 3). The purpose of these analyses is to determine whether the land use and network changes proposed by this project can be supported by the County's Mobility Element.

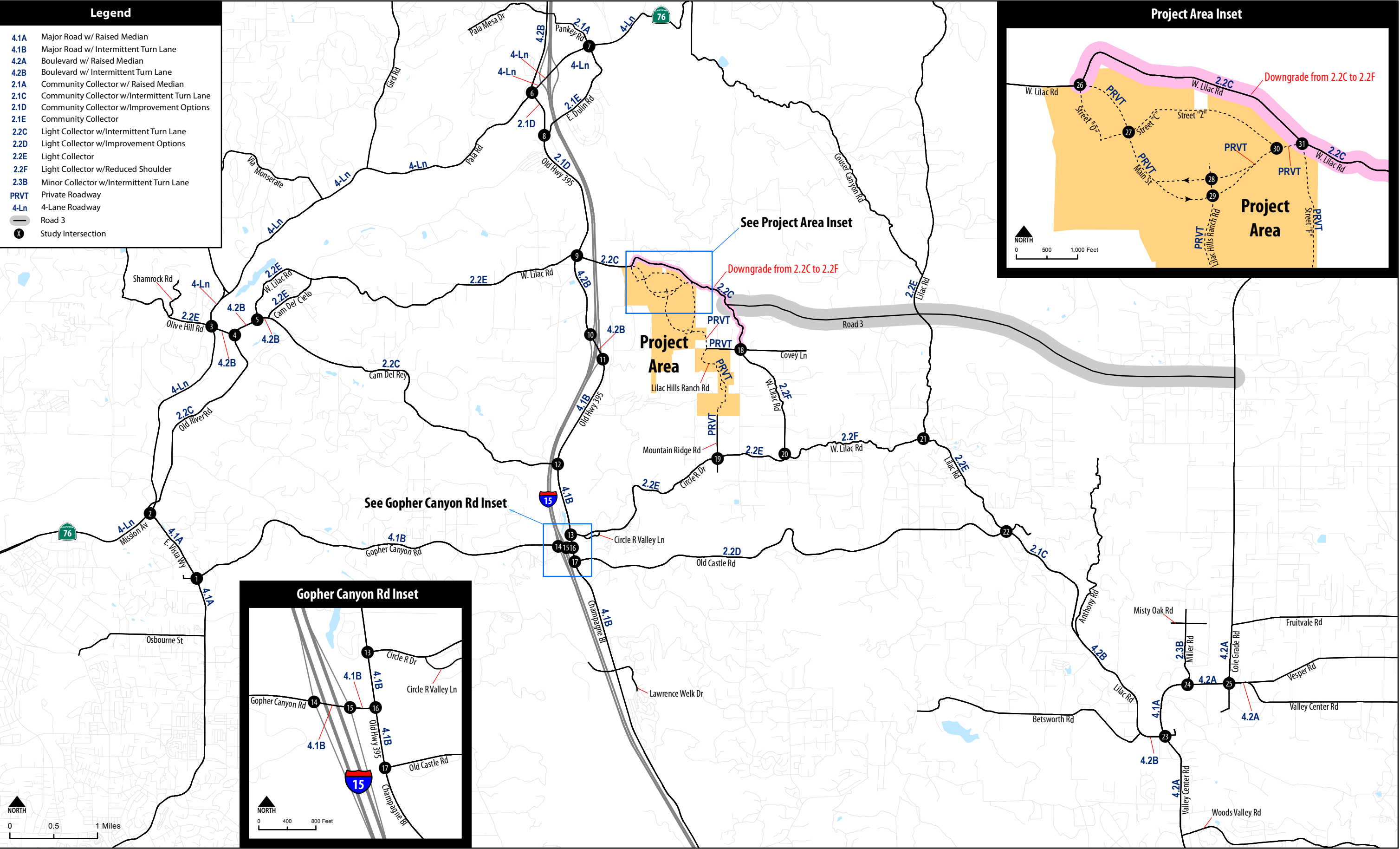
9.1 Horizon Year Roadway Network and Traffic Volumes

The Horizon Year roadway network is based on the County's General Plan Mobility Element, with the alternatives of Road 3 in or out, to reflect the currently adopted General Plan (with Road 3) and the reasonably expected network (without Road 3). **Figure 9-1** displays the Horizon Year roadway geometrics.

SANDAG traffic model forecasts are required for the Horizon Year analysis. The current Series 12 Regional Transportation Model, yet to be calibrated or validated at the community plan level for the unincorporated County of San Diego, has been found to generate forecast roadway average daily traffic (ADT) volumes that are significantly different from those illustrated in the recently adopted General Plan Update Mobility Element (Series 10). Unfortunately, the Series 10 County GPU Model is no longer available for our use. In order to utilize the best available and most defensible data for the CEQA-level traffic analysis, the following approach was utilized and approved by both the County of San Diego and Caltrans for developing the Horizon Year volumes:

County Facilities

- Utilize the Series 10 GPU 2030 model forecast ADT as a starting point.
- Conduct "Select Zone" assignments for the proposed Lilac Hills Ranch project using the Series 12 Regional Transportation Model. Project trip distribution and assignment, as well as the potential study area, were derived from these "Select Zone" assignments.
- Compare the trip generation between the adopted and proposed land uses for the subject TAZs.
- The difference in trip generation between the adopted and proposed land uses, along with the proposed project distribution from the Select Zone assignments mentioned above, were used to derive 2030 ADTs for the proposed project.



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Figure 9-1
Roadway Geometrics - Horizon Year Conditions

Caltrans Facilities

- Utilize forecast ADTs from Year 2050 of the Series 12 Regional Transportation Model as adopted in the 2050 RTP. While this regional model is not calibrated at the arterial and local street level, it is calibrated and approved for use at the state facility level.
- The difference in trip generation (between the adopted and proposed land uses for the subject TAZs), along with the proposed project distribution (from the Series 12 “Select Zone” assignments) was used to derive the Horizon Year with proposed project freeway/state highway segment ADTs.

9.2 Horizon Year with Road 3 Traffic Conditions

The following two (2) scenarios are discussed in this section:

- Horizon Year Base Conditions with Road 3
- Horizon Year Base Plus Project Conditions with Road 3

Level of service analyses under the Horizon Year conditions with Road 3 were conducted using the methodologies described in Chapter 2.0. At the County’s request, intersection analysis was not conducted under Horizon Year scenarios. Roadway and freeway segment level of service results are discussed separately below.

9.2.1 Horizon Year Base with Road 3

Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-2**.

Roadway Segment Analysis

Table 9.1 displays the level of service analysis results for key roadway segments under Horizon Year Base Conditions with Road 3.

TABLE 9.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	5,810	C
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	4,960	C
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	6,300	C
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	8,110	C
W. Lilac Road	Main Street	Street “F”	2.2C	13,500	10,630	C

TABLE 9.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

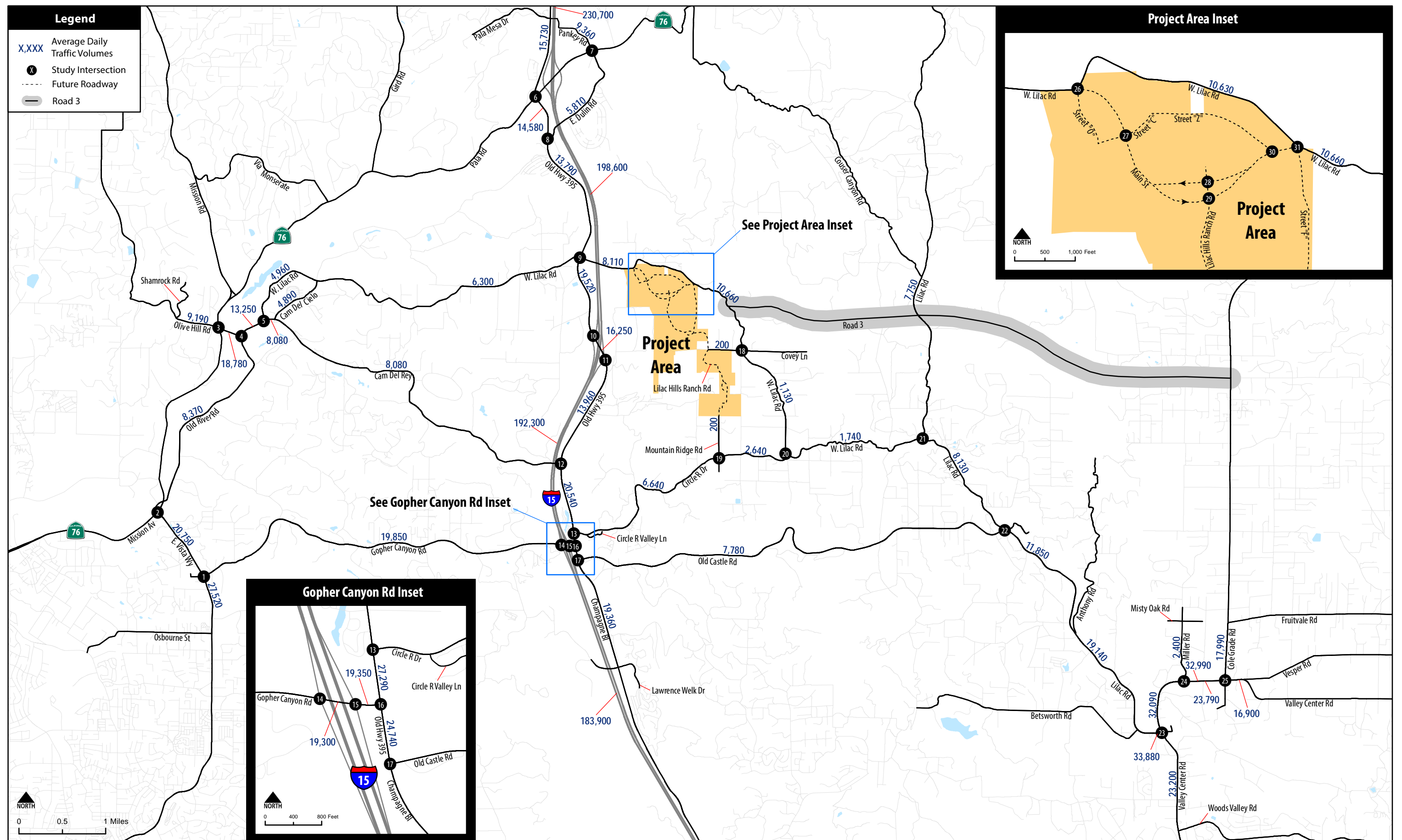
Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
W. Lilac Road	Street "F"	Road 3	2.2C	13,500	10,660	C
W. Lilac Road	Road 3	Covey Lane	2.2F	8,700	1,130	A
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	1,130	A
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	1,740	A
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,890	C
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	9,190	D
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	18,780	B
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	13,250	A
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,080	A
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,080	C
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	19,850	B
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	19,300	B
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	19,350	B
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	6,640	C
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	2,640	B
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	7,780	C
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,750	B
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,520	C
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,370	C
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	15,730	A
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	14,580	E accepted at LOS E/F
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	13,790	E
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	19,520	B
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	16,250	A

TABLE 9.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	13,960	B
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	20,540	B
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	27,290	C
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	24,740	C
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	19,360	B
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	9,360	C
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	7,750	D
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	8,130	D
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	11,850	D
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	19,140	B
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	33,880	F accepted at LOS E/F
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,200	C
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	32,090	D
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	32,990	F accepted at LOS E/F
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	23,790	C
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,900	A
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,400	A
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	17,990	A

Source: Chen Ryan Associates; June 2013

Note:
 Bold letter indicates unacceptable LOS E or F.



Lilac Hills Ranch Traffic Impact Study

Figure 9-2
Roadway Average Daily Traffic Volumes -
Horizon Year Base Conditions with Road 3

As shown in Table 9.1, the following four (4) study area roadway segments are projected to operate at substandard LOS E/F under Horizon Year Base conditions with Road 3:

- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the County General Plan Update has accepted LOS E/F operations along this segment;
- Old Highway 395, between E. Dulin Road and W. Lilac Road – LOS E;
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment; and
- Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.2** displays the resulting level of service for I-15 under Horizon Year Base conditions with Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, the following ten (10) freeway segments along I-15 are projected to operate at substandard LOS E or F under Horizon Year Base conditions with Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and SR-76 – LOS F;
- I-15, between SR-76 and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F;
- I-15, between El Norte Parkway and SR-78 – LOS F;
- I-15, between SR-78 and W Valley Parkway – LOS E; and
- I-15, between Via Rancho Parkway and Bernardo Drive – LOS F.

9.2.2 Horizon Year Base Plus Project with Road 3

Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-3**.

TABLE 9.2
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Riverside County Boundary to Old Highway 395	267,800	8.4%	22,624	0.64	4	0.95	6.75%	3,911	1.664	F
I-15	Old Highway 395 to SR-76	230,700	7.4%	17,162	0.73	4	0.95	6.75%	3,415	1.453	F
I-15	SR-76 to Old Highway 395	198,600	7.8%	15,534	0.69	4	0.95	8.40%	2,920	1.243	F
I-15	Old Highway 395 to Gopher Canyon Road	192,300	8.1%	15,530	0.67	4	0.95	8.40%	2,844	1.210	F
I-15	Gopher Canyon Road to Deer Springs Road	183,900	8.1%	14,852	0.67	4	0.95	13.20%	2,782	1.184	F
I-15	Deer Springs Road to Centre City Parkway	178,700	8.0%	14,357	0.66	4	0.95	13.20%	2,676	1.139	F
I-15	Centre City Parkway to El Norte Parkway	169,200	8.0%	13,594	0.66	4	0.95	13.20%	2,534	1.078	F
I-15	El Norte Parkway to SR-78	193,600	7.9%	15,238	0.66	4	0.95	10.00%	2,799	1.191	F
I-15	SR-78 to W Valley Parkway	288,800	8.1%	23,504	0.60	5+2ML	0.95	10.00%	2,226	0.947	E
I-15	W Valley Parkway to Auto Parkway	281,300	8.1%	22,893	0.60	5+2ML	0.95	10.00%	2,168	0.923	D
I-15	Auto Parkway to W Citracado Parkway	276,100	7.8%	21,413	0.60	5+2ML	0.95	10.00%	2,016	0.858	D
I-15	W Citracado Parkway to Via Rancho Parkway	279,100	7.8%	21,646	0.60	5+2ML	0.95	7.00%	2,009	0.855	D
I-15	Via Rancho Parkway to Bernardo Drive	392,100	7.4%	28,857	0.58	5+2ML	0.95	7.00%	2,598	1.105	F

TABLE 9.2
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

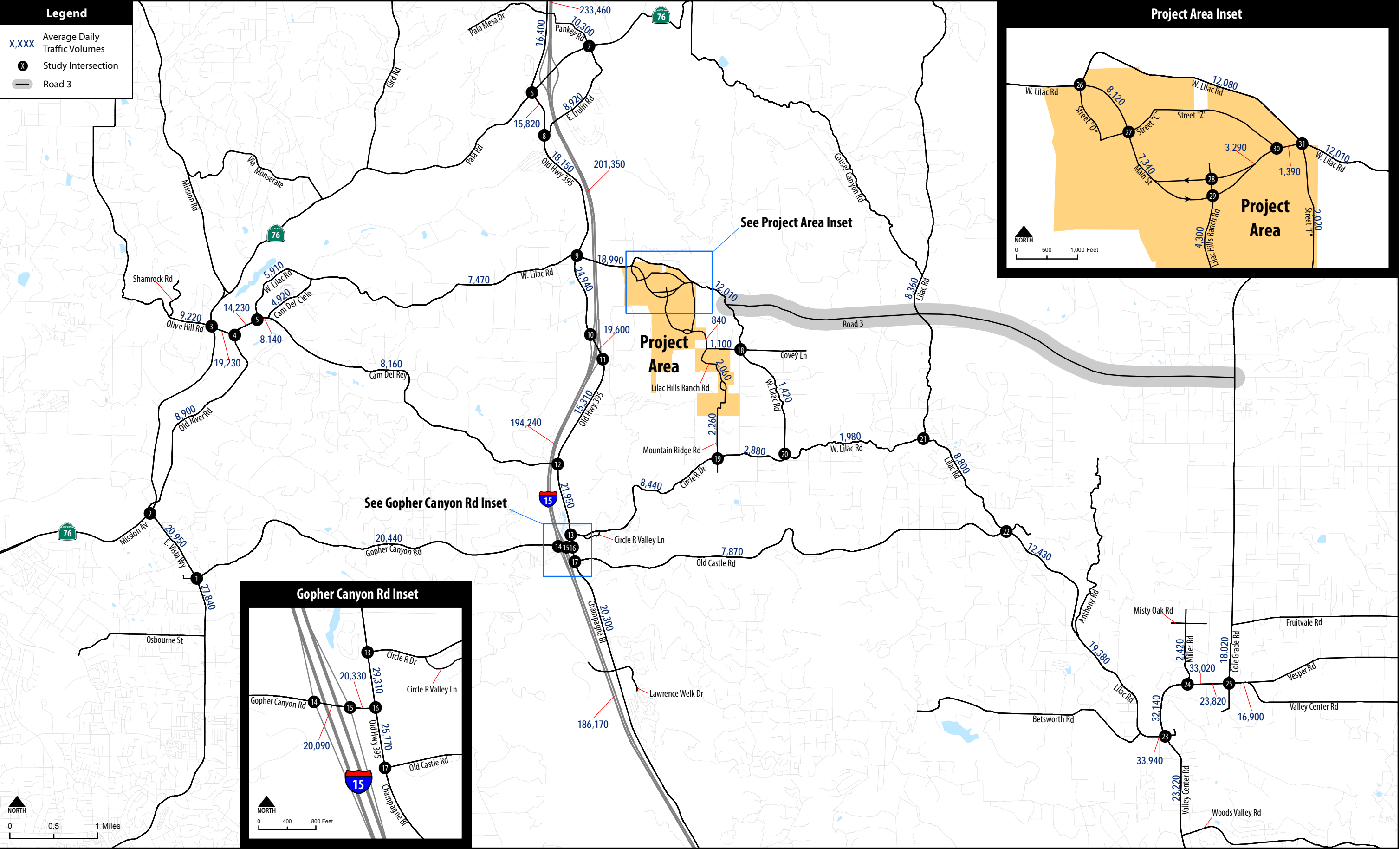
Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Bernardo Drive to Rancho Bernardo Road	261,100	7.4%	19,216	0.58	5+2ML	0.95	7.00%	1,730	0.736	C
I-15	Rancho Bernardo Road to Bernardo Center Drive	300,500	7.3%	22,063	0.54	5+2ML	0.95	7.00%	1,840	0.783	C
I-15	Bernardo Center Drive to Camino Del Norte	269,300	7.3%	19,772	0.54	5+2ML	0.95	7.00%	1,649	0.702	C

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.



Lilac Hills Ranch Traffic Impact Study

CHEN RYAN

Figure 9-3

Roadway Average Daily Traffic Volumes -
Horizon Year Base Plus Project Conditions with Road 3

Roadway Segment Analysis

Table 9.3 displays the level of service analysis results for key roadway segments under Horizon Year Base Plus Project conditions with Road 3. Note that the Lilac Hills Ranch project proposes downgrading W. Lilac Road, between Main Street and the planned Road 3 from 2.2C to 2.2F.

As shown in the table, the following seven (7) roadway segments are projected to operate at substandard LOS E or F:

- W. Lilac Road, between Old Highway 395 and Main Street – LOS E, and the project would add more than 200 daily trips.
- W. Lilac Road, between Main Street and Street “F” – LOS F, and the project would add more than 100 daily trips.
- W. Lilac Road, between Street “F” and Road 3 – LOS F, and the project would add more than 100 daily trips.
- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the project would add more than 200 daily trips. The County General Plan Update has accepted LOS E/F operations along this segment.
- Old Highway 395, between E. Dulin Road and W. Lilac Road – LOS E, and the project would add more than 200 daily trips.
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the project would add less than 200 daily trips. In addition, the County General Plan Update has accepted LOS E/F operations at this segment.
- Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the project would add less than 200 daily trips. In addition, the County General Plan Update has accepted LOS E/F operations at this segment.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the Lilac Hills Ranch project would have traffic impacts (planning level initial assessment) to 5 out of 7 of the roadway segments identified above and there include:

- W. Lilac Road, between Old Highway 395 and Main Street;
- W. Lilac Road, between Main Street and Street “F”;
- W. Lilac Road, between Street “F” and Road 3;
- Old Highway 395, between SR-76 and E. Dulin Road;
- Old Highway 395, between E. Dulin Road and W. Lilac Road.

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	8,920	D	5,810	C	3,110	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	5,910	C	4,960	C	950	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	7,470	D	6,300	C	1,170	No
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	18,990	E	8,110	C	10,880	Yes > 200ADT
W. Lilac Road	Main Street	Street "F"	2.2F*	8,700	12,080	F	10,630	D	1,450	Yes > 100ADT
W. Lilac Road	Street "F"	Road 3	2.2F*	8,700	12,010	F	10,660	D	1,350	Yes > 100ADT
W. Lilac Road	Road 3	Covey Lane	2.2F	8,700	1,680	A	1,130	A	550	No
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	1,420	A	1,130	A	290	No
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	1,980	A	1,740	A	240	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,920	C	4,890	C	30	No
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	9,220	D	9,190	D	30	No
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	19,230	B	18,780	B	450	No
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	14,230	A	13,250	A	980	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,140	A	8,080	A	60	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,160	C	8,080	C	80	No

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	20,440	B	19,850	B	590	No
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	20,090	B	19,300	B	790	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	20,330	B	19,350	B	980	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	8,440	D	6,640	C	1,800	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	2,880	B	2,640	B	240	No
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	7,870	C	7,780	C	90	No
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,950	B	20,750	B	200	No
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,840	C	27,520	C	320	No
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,900	C	8,370	C	530	No
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	16,400	A	15,730	A	670	No
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	15,820	E accepted at LOS E/F	14,580	E accepted at LOS E/F	1,240	Yes > 200ADT
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	18,150	E	13,790	E	4,360	Yes > 200ADT
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	24,940	D	19,520	B	5,420	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	19,600	B	16,250	A	3,350	No

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	15,310	B	13,960	B	1,350	No
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	21,950	B	20,540	B	1,410	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	29,310	D	27,290	C	2,020	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	25,770	C	24,740	C	1,030	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	20,300	B	19,360	B	940	No
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	10,300	B	9,360	C	940	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	8,360	D	7,750	D	610	No
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	8,800	D	8,130	D	670	No
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	12,430	D	11,850	D	580	No
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	19,380	B	19,140	B	240	No
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	33,940	F accepted at LOS E/F	33,880	F accepted at LOS E/F	60	No < 200ADT
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,220	C	23,200	C	20	No
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	32,140	D	32,090	D	50	No

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	33,020	F accepted at LOS E/F	32,990	F accepted at LOS E/F	30	No < 200ADT
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	23,820	C	23,790	C	30	No
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,900	A	16,900	A	0	No
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,420	A	2,400	A	20	No
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	18,020	B	17,990	A	30	No

Source: Chen Ryan Associates; June 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

*Proposed downgrade from 2.2C to 2.2F.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.4** displays the resulting level of service for I-15 under Horizon Year Base Plus Project conditions with Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, similar to the base (no-project) conditions, the following ten (10) freeway segments along I-15 would continue to operate at substandard LOS E or F under Horizon Year Base Plus Project conditions with Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and SR-76 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-76 and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between El Norte Parkway and SR-78 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-78 and W Valley Parkway – LOS E, and the project traffic would not increase the V/C ratio by more than 0.01; and
- I-15, between Via Rancho Parkway and Bernardo Drive – LOS F, and the project traffic would not increase the V/C ratio by more than 0.01.

TABLE 9.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Project Impact?
I-15	Riverside County Boundary to Old Highway 395	270,510	8.4%	22,853	0.64	4	0.95	6.75%	3,950	1.681	F	0.017	Yes > 0.01
I-15	Old Highway 395 to SR-76	233,460	7.4%	17,368	0.73	4	0.95	6.75%	3,456	1.471	F	0.017	Yes > 0.01
I-15	SR-76 to Old Highway 395	201,350	7.8%	15,750	0.69	4	0.95	8.40%	2,960	1.260	F	0.017	Yes > 0.01
I-15	Old Highway 395 to Gopher Canyon Road	194,240	8.1%	15,687	0.67	4	0.95	8.40%	2,872	1.222	F	0.012	Yes > 0.01
I-15	Gopher Canyon Road to Deer Springs Road	186,170	8.1%	15,035	0.67	4	0.95	13.20%	2,817	1.199	F	0.015	Yes > 0.01
I-15	Deer Springs Road to Centre City Parkway	180,790	8.0%	14,525	0.66	4	0.95	13.20%	2,707	1.152	F	0.013	Yes > 0.01
I-15	Centre City Parkway to El Norte Parkway	171,000	8.0%	13,738	0.66	4	0.95	13.20%	2,560	1.090	F	0.011	Yes > 0.01
I-15	El Norte Parkway to SR-78	195,280	7.9%	15,370	0.66	4	0.95	10.00%	2,823	1.201	F	0.010	Yes > 0.01
I-15	SR-78 to W Valley Parkway	290,040	8.1%	23,605	0.60	5+2ML	0.95	10.00%	2,236	0.951	E	0.004	No < 0.01
I-15	W Valley Parkway to Auto Parkway	282,360	8.1%	22,980	0.60	5+2ML	0.95	10.00%	2,177	0.926	D	0.003	No
I-15	Auto Parkway to W Citracado Parkway	277,100	7.8%	21,491	0.60	5+2ML	0.95	10.00%	2,023	0.861	D	0.003	No

TABLE 9.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Project Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	280,020	7.8%	21,717	0.60	5+2ML	0.95	7.00%	2,016	0.858	D	0.003	No
I-15	Via Rancho Parkway to Bernardo Drive	392,960	7.4%	28,921	0.58	5+2ML	0.95	7.00%	2,604	1.108	F	0.002	No < 0.01
I-15	Bernardo Drive to Rancho Bernardo Road	261,900	7.4%	19,275	0.58	5+2ML	0.95	7.00%	1,735	0.738	C	0.002	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	301,230	7.3%	22,116	0.54	5+2ML	0.95	7.00%	1,845	0.785	C	0.002	No
I-15	Bernardo Center Drive to Camino Del Norte	269,980	7.3%	19,822	0.54	5+2ML	0.95	7.00%	1,653	0.704	C	0.002	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the proposed project would result in traffic impacts at eight (8) of the above freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

9.2.3 Horizon Year with Road 3 Impact Significance and Mitigation

This section identifies required mitigation measures for roadway and freeway facilities that would be impacted by project-related traffic under Horizon Year Base Plus Project conditions with Road 3.

Roadway Segments

Based on the County planning level impact criteria, the project traffic would result in traffic impacts at five (5) of the study area roadway segments, including:

- W. Lilac Road, between Old Highway 395 and Main Street;
- W. Lilac Road, between Main Street and Street “F”;
- W. Lilac Road, between Street “F” and Road 3;
- Old Highway 395, between SR-76 and E. Dulin Road; and
- Old Highway 395, between E. Dulin Road and W. Lilac Road.

W. Lilac Road, between Main Street and Road 3, is projected to operate at LOS F mainly due to the classification downgrade (from 2.2C to 2.2F) proposal while Road 3 is still assumed as a part of the Mobility Element. However, after adoption of the County General Plan Update, SANDAG acquired the 902-acre Rancho Lilac property through its EMP in October 2011. SANDAG recorded a conservation easement over the entire 902 acres and designated this land as part of a 1,600 acre open space preserve in the State Route 76 corridor in North San Diego County. This acquisition would prevent implementation of the County’s planned Road 3, and make the deletion of Road 3 from the currently adopted Mobility Element network a reasonably expected scenario. Thus, no mitigation measures would be required since this road would operate at acceptable levels of service without Road 3.

A more detailed arterial analysis was conducted for the other 3 segments. The Highway Capacity Software (HCS) 2000 developed by McTrans was employed for a more detailed arterial analysis. The HCS arterial analysis methodology is based upon Chapter 15 of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to roadway functional classification. The subject segments were evaluated with free-flow speeds (FFS) of 35-40 mph. **Table 9.5** displays the arterial travel speed and level of service for W. Lilac Road and Old Highway 395, and the respective analysis worksheets are included in **Appendix AH**.

TABLE 9.5
ARTERIAL LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Arterial	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
		Speed (mph)	LOS	Speed (mph)	LOS
W. Lilac Road, between Old Highway 395 and Main Street	35	16.4	C	16.1	C
Old Highway 395, between SR-76 and E. Dulin Road	40	21.1	D	18.6	D
Old Highway 395, between E. Dulin Road and W. Lilac Road	40	30.4	B	29.8	B

Source: Chen Ryan Associates; January 2013

As shown in the table above, all three (3) segments would operate at acceptable LOS D or better under Horizon Year Base Plus Project (with Road 3) conditions based on the arterial analysis. Therefore, it is appropriate to consider that no mitigation measures would be necessary at these locations.

In addition, traffic control along W. Lilac Road includes a number of roundabouts, with implementation of the proposed project. It has been well documented by the La Jolla Bird Rock roundabouts and other national-level research that 2 lanes of travel with roundabouts can carry up to 25,000 cars per day, which exceeds the projected 18,990 ADT (maximum) for W. Lilac Road. A multi-purpose trail is also provided along the south side of W. Lilac Road and this will greatly improve safety and comfort for pedestrians and bicyclists.

Freeways

The additional traffic generated by the proposed Lilac Hills Ranch project would have significant impacts at the following eight (8) freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;

- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

The 2050 RTP indicates that four (4) toll lanes are planned to be added along I-15, between the Riverside County Boundary and SR-78 by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study. Furthermore, there are no planned I-15 (north of SR-78) mainline improvements as per SANDAG's 2050 RTP, thus the impacts would remain significant and unmitigable.

Table 9.6 summarizes potential impacts and recommended mitigation measures associated with the Lilac Hills Ranch project under Horizon Year with Road 3 conditions.

TABLE 9.6
IMPACT AND MITIGATION SUMMARY
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Roadway Segment</i>		
W. Lilac Road, between Old Highway 395 and Main Street	None	<ul style="list-style-type: none"> • Roundabouts increase operational capacity • Improve pedestrian and bicycle facility - multi-purpose trail • Acceptable arterial speed • R-O-W constrains at the I-15 overpass
W. Lilac Road, between Main Street and Street "F"	None	Road 3 is likely to be eliminated from the Mobility Element network – this road would operate at acceptable LOS as a 2.2F.
W. Lilac Road, between Street "F" and Road 3	None	Road 3 is likely to be eliminated from the Mobility Element network – this road would operate at acceptable LOS as a 2.2F.
Old Highway 395, between SR-76 and E. Dulin Road	Option 1 - None	<ul style="list-style-type: none"> • Continue accepting LOS E/F as in the current GP • Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.
Old Highway 395, between E. Dulin Road and W. Lilac Road	Option 1 - None	<ul style="list-style-type: none"> • Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.

TABLE 9.6
IMPACT AND MITIGATION SUMMARY
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Freeway</i>		
I-15, between Riverside County Boundary and Old Highway 395	None	No planned improvement – no feasible mitigation
I-15, between Old Highway 395 and SR-76	None	No planned improvement – no feasible mitigation
I-15, between SR-76 and Old Highway 395	None	No planned improvement – no feasible mitigation
I-15, between Old Highway 395 and Gopher Canyon Road	None	No planned improvement – no feasible mitigation
I-15, between Gopher Canyon Road and Deer Springs Road	None	No planned improvement – no feasible mitigation
I-15, between Deer Springs Road and Centre City Parkway	None	No planned improvement – no feasible mitigation
I-15, between Centre City Parkway and El Norte Parkway	None	No planned improvement – no feasible mitigation
I-15, between El Norte Parkway and SR-78	None	No planned improvement – no feasible mitigation

Source: Chen Ryan Associates; January 2013

9.3 Horizon Year without Road 3 Traffic Conditions

The following two (2) scenarios are discussed in this section:

- Horizon Year Base Conditions without Road 3
- Horizon Year Base Plus Project Conditions without Road 3

Level of service analyses under the Horizon Year conditions without Road 3 were conducted using the methodologies described in Chapter 2.0. At the County's request, intersection analysis was not conducted under the Horizon Year scenarios. Roadway and freeway segment level of service results are discussed separately below.

9.3.1 Horizon Year Base without Road 3

Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-4**.

Legend

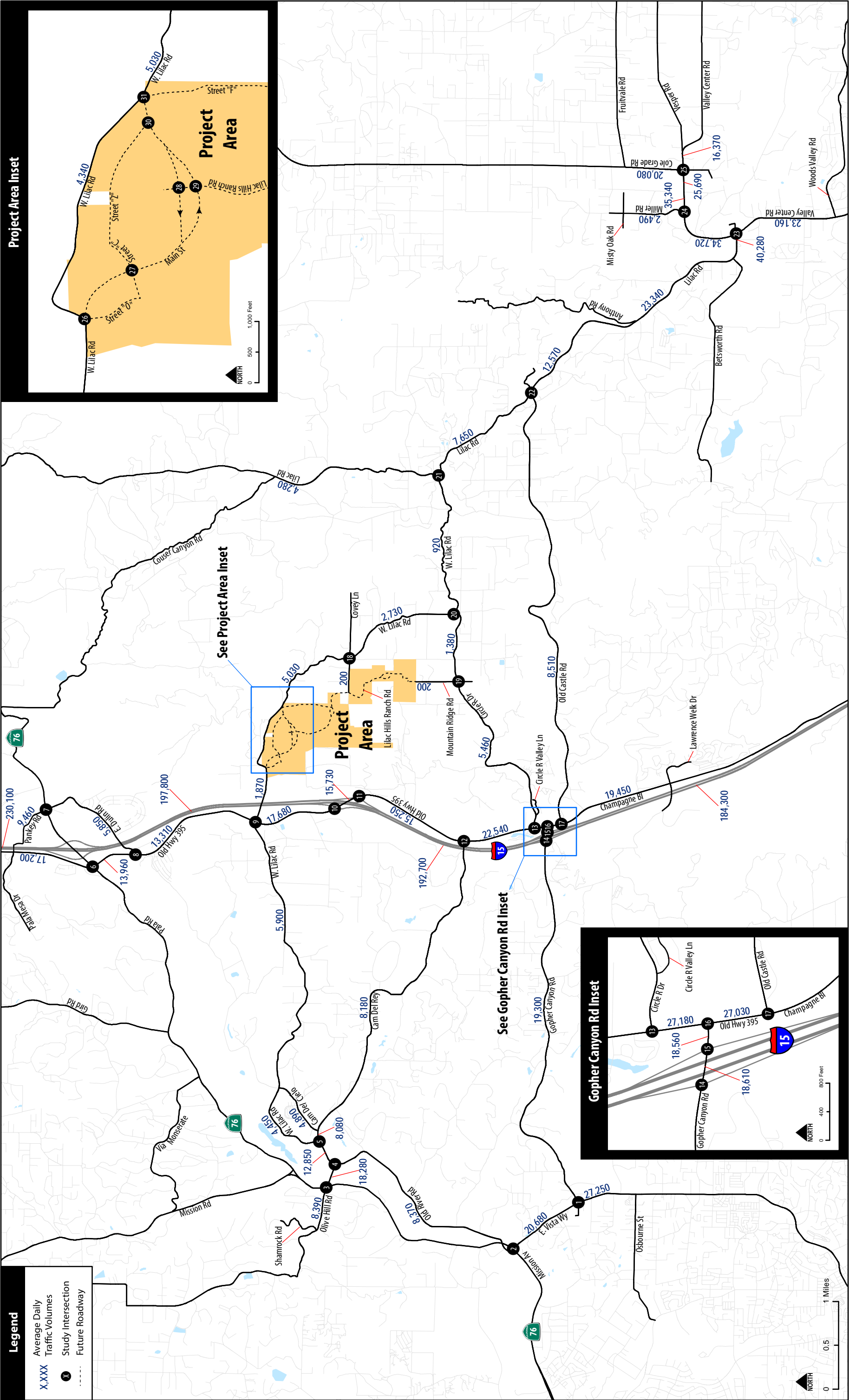
X,XXX

Average Daily Traffic Volumes

●

Study Intersection

Future Roadway



Lilac Hills Ranch Traffic Impact Study

Figure 9-4

Roadway Average Daily Traffic Volumes -
Horizon Year Base Conditions without Road 3

Roadway Segment Analysis

Table 9.7 displays the level of service analysis results for key roadway segments under Horizon Year Base Conditions without Road 3.

TABLE 9.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	5,850	C
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	4,450	C
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	5,900	C
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	1,870	A
W. Lilac Road	Main Street	Street "F"	2.2C	13,500	4,340	B
W. Lilac Road	Street "F"	Running Creek Road	2.2C	13,500	5,030	B
W. Lilac Road	Running Creek Road	Covey Lane	2.2F	8,700	2,730	A
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	2,730	A
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	920	A
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,890	C
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	8,390	D
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	18,280	B
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	12,850	A
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,080	A
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,180	C
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	19,300	B
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	18,610	B
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	18,560	B
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	5,460	C
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	1,380	A
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	8,510	C

TABLE 9.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,680	B
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,250	C
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,370	C
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	17,200	B
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	13,960	E accepted at LOS E/F
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	13,310	D
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	17,680	B
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	15,730	A
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	15,250	B
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	22,540	B
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	27,180	C
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	27,030	C
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	19,450	B
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	9,460	A
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	4,280	C
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	7,650	D
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	12,570	D
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	23,340	D

TABLE 9.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	40,280	F accepted at LOS E/F
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,160	C
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	34,720	E
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	35,340	F accepted at LOS E/F
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	25,690	D
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,370	A
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,490	A
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	20,080	B

Source: Chen Ryan Associates; June 2013

Note:

Bold letter indicates unacceptable LOS E or F.

As shown in Table 9.7, the following four (4) study area roadway segments are projected to operate at substandard LOS E/F under Horizon Year Base conditions without Road 3:

- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the County General Plan Update has accepted LOS E/F operations along this segment;
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment;
- Valley Center Road, between Lilac Road and Miller Road – LOS E; and
- Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.8** displays the resulting level of service for I-15 under Horizon Year Base Conditions without Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, similar to the Horizon Year Base with Road 3 scenario, the following ten (10) freeway segments along I-15 are projected to operate at substandard LOS E or F under Horizon Year Base conditions without Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and SR-76 – LOS F;
- I-15, between SR-76 and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F;
- I-15, between El Norte Parkway and SR-78 – LOS F;
- I-15, between SR-78 and W Valley Parkway – LOS E; and
- I-15, between Via Rancho Parkway and Bernardo Drive – LOS F.

9.3.2 Horizon Year Base Plus Project without Road 3

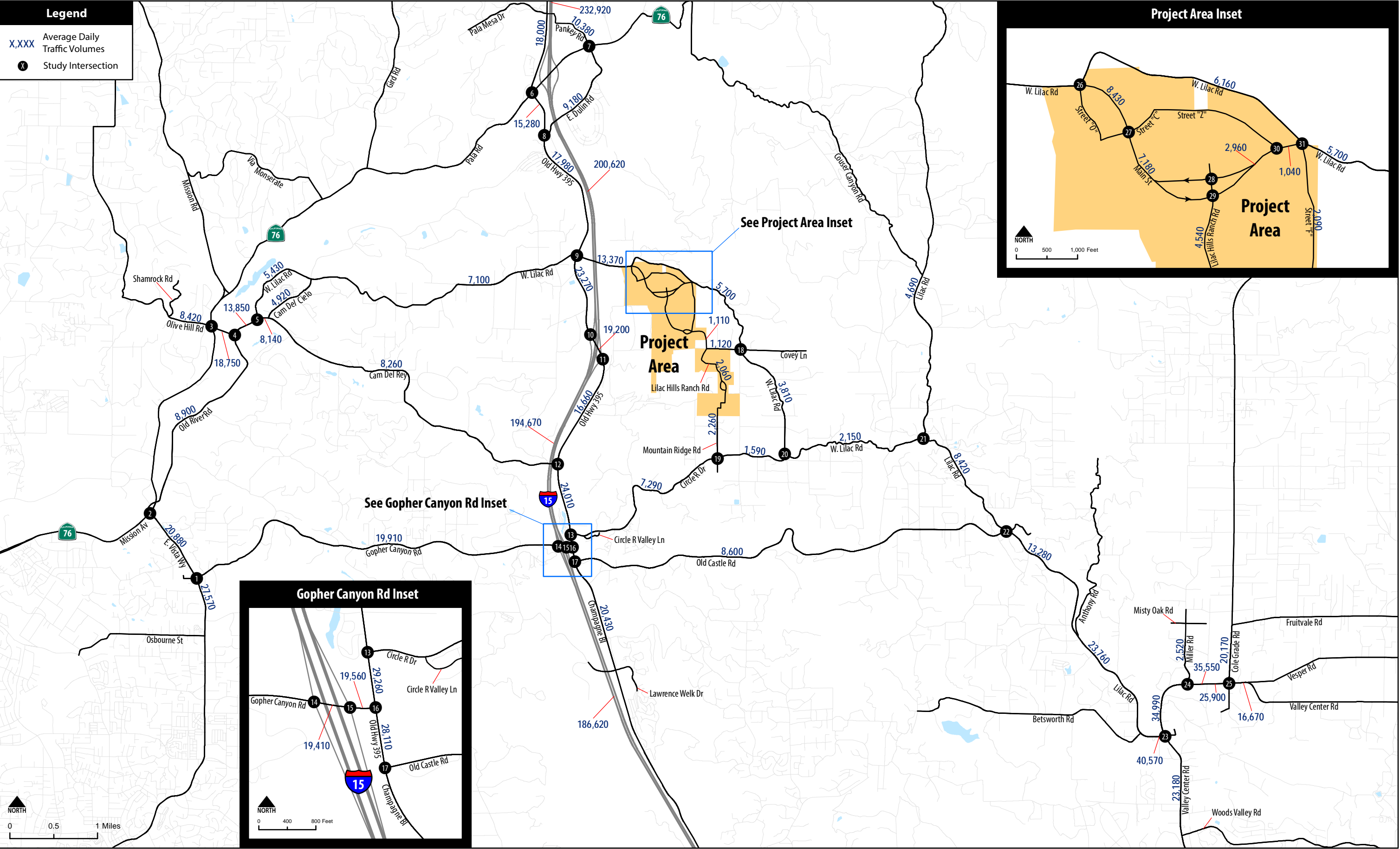
Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-5**.

Roadway Segment Analysis

Table 9.9 displays the level of service analysis results for key roadway segments under Horizon Year Base Plus Project Conditions without Road 3. Note that the Lilac Hills Ranch project proposes to downgrade W. Lilac Road, between Main Street and the planned Road 3 (Running Creek Road) from 2.2C to 2.2F.

As shown in the table, the following five (5) roadway segments would operate at substandard LOS E or F:

- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the project would add more than 200 daily trips. The County General Plan Update has accepted LOS E/F operations along this segment.



Lilac Hills Ranch Traffic Impact Study

CHEN RYAN

Figure 9-5

Roadway Average Daily Traffic Volumes -
Horizon Year Base Plus Project Conditions without Road 3

TABLE 9.8
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Riverside County Boundary to Old Highway 395	266,100	8.4%	22,481	0.64	4	0.95	6.75%	3,886	1.654	F
I-15	Old Highway 395 to SR-76	230,100	7.4%	17,118	0.73	4	0.95	6.75%	3,406	1.449	F
I-15	SR-76 to Old Highway 395	197,800	7.8%	15,472	0.69	4	0.95	8.40%	2,908	1.238	F
I-15	Old Highway 395 to Gopher Canyon Road	192,700	8.1%	15,562	0.67	4	0.95	8.40%	2,850	1.213	F
I-15	Gopher Canyon Road to Deer Springs Road	184,300	8.1%	14,884	0.67	4	0.95	13.20%	2,788	1.186	F
I-15	Deer Springs Road to Centre City Parkway	179,200	8.0%	14,397	0.66	4	0.95	13.20%	2,683	1.142	F
I-15	Centre City Parkway to El Norte Parkway	169,500	8.0%	13,618	0.66	4	0.95	13.20%	2,538	1.080	F
I-15	El Norte Parkway to SR-78	193,700	7.9%	15,246	0.66	4	0.95	10.00%	2,801	1.192	F
I-15	SR-78 to W Valley Parkway	289,100	8.1%	23,528	0.60	5+2ML	0.95	10.00%	2,229	0.948	E
I-15	W Valley Parkway to Auto Parkway	281,600	8.1%	22,918	0.60	5+2ML	0.95	10.00%	2,171	0.924	D
I-15	Auto Parkway to W Citracado Parkway	276,300	7.8%	21,429	0.60	5+2ML	0.95	10.00%	2,018	0.859	D
I-15	W Citracado Parkway to Via Rancho Parkway	279,100	7.8%	21,646	0.60	5+2ML	0.95	7.00%	2,009	0.855	D
I-15	Via Rancho Parkway to Bernardo Drive	392,400	7.4%	28,880	0.58	5+2ML	0.95	7.00%	2,600	1.106	F

TABLE 9.8
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Bernardo Drive to Rancho Bernardo Road	261,000	7.4%	19,209	0.58	5+2ML	0.95	7.00%	1,729	0.736	C
I-15	Rancho Bernardo Road to Bernardo Center Drive	300,800	7.3%	22,085	0.54	5+2ML	0.95	7.00%	1,842	0.784	C
I-15	Bernardo Center Drive to Camino Del Norte	270,100	7.3%	19,831	0.54	5+2ML	0.95	7.00%	1,654	0.704	C

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	9,180	D	5,850	C	3,330	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	5,430	C	4,450	C	980	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	7,100	C	5,900	C	1,200	No
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	13,370	D	1,870	A	11,500	No
W. Lilac Road	Main Street	Street "F"	2.2F*	8,700	6,160	B	4,340	B	1,820	No

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
W. Lilac Road	Street "F"	Running Creek Road	2.2F*	8,700	5,700	A	5,030	B	670	No
W. Lilac Road	Running Creek Road	Covey Lane	2.2F	8,700	3,400	A	2,730	A	670	No
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	3,810	A	2,730	A	1,080	No
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	2,150	A	920	A	1,230	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,920	C	4,890	C	30	No
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	8,420	D	8,390	D	30	No
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	18,750	B	18,280	B	470	No
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	13,850	A	12,850	A	1,000	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,140	A	8,080	A	60	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,260	C	8,180	C	80	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	19,910	B	19,300	B	610	No
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	19,410	B	18,610	B	800	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	19,560	B	18,560	B	1,000	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	7,290	D	5,460	C	1,830	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	1,590	A	1,380	A	210	No
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	8,600	C	8,510	C	90	No
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,880	B	20,680	B	200	No

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,570	C	27,250	C	320	No
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,900	C	8,370	C	530	No
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	18,000	B	17,200	B	800	No
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	15,280	E accepted at LOS E/F	13,960	E accepted at LOS E/F	1,320	Yes > 200ADT
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	17,980	E	13,310	D	4,670	Yes > 200ADT
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	23,270	D	17,680	B	5,590	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	19,200	B	15,730	A	3,470	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	16,660	B	15,250	B	1,410	No
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	24,010	C	22,540	B	1,470	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	29,260	D	27,180	C	2,080	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	28,110	D	27,030	C	1,080	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	20,430	B	19,450	B	980	No
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	10,380	B	9,460	A	920	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	4,690	C	4,280	C	410	No
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	8,420	D	7,650	D	770	No
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	13,280	D	12,570	D	710	No

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	Project Impact?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	23,760	D	23,340	D	420	No
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	40,570	F accepted at LOS E/F	40,280	F accepted at LOS E/F	290	<i>Yes > 200ADT</i>
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,180	C	23,160	C	20	No
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	34,990	E	34,720	E	270	No < 400ADT
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	35,550	F accepted at LOS E/F	35,340	F accepted at LOS E/F	210	<i>Yes > 200ADT</i>
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	25,900	D	25,690	D	210	No
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,670	A	16,580	A	90	No
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,520	A	2,490	A	30	No
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	20,170	B	20,080	B	90	No

Source: Chen Ryan Associates; June 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

*Proposed downgrade from 2.2C to 2.2F.

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- Old Highway 395, between E. Dulin Road and W. Lilac Road – LOS E, and the project would add more than 200 daily trips.
 - Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the project would add more than 200 daily trips. The County General Plan Update has accepted LOS E/F operations at this segment.
 - Valley Center Road, between Lilac Road and Miller Road - LOS E, and the project would add less than 400 daily trips.
 - Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the project would add more than 200 daily trips. The County General Plan Update has accepted LOS E/F operations at this segment.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the Lilac Hills Ranch project would have traffic impacts (planning level initial assessment) to all but one segment (Valley Center Road, between Lilac Road and Miller Road) discussed above.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.10** displays the resulting level of service for I-15 under Horizon Year Base Plus Project Conditions without Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, the following ten (10) freeway segments along I-15 would continue to operate at substandard LOS E or F under Horizon Year Base Plus Project conditions without Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and SR-76 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-76 and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;

TABLE 9.10
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Project Impact?
I-15	Riverside County Boundary to Old Highway 395	268,880	8.4%	22,716	0.64	4	0.95	6.75%	3,926	1.671	F	0.017	Yes > 0.01
I-15	Old Highway 395 to SR-76	232,920	7.4%	17,327	0.73	4	0.95	6.75%	3,448	1.467	F	0.018	Yes > 0.01
I-15	SR-76 to Old Highway 395	200,620	7.8%	15,692	0.69	4	0.95	8.40%	2,950	1.255	F	0.018	Yes > 0.01
I-15	Old Highway 395 to Gopher Canyon Road	194,670	8.1%	15,721	0.67	4	0.95	8.40%	2,879	1.225	F	0.012	Yes > 0.01
I-15	Gopher Canyon Road to Deer Springs Road	186,620	8.1%	15,071	0.67	4	0.95	13.20%	2,823	1.201	F	0.015	Yes > 0.01
I-15	Deer Springs Road to Centre City Parkway	181,330	8.0%	14,568	0.66	4	0.95	13.20%	2,715	1.155	F	0.014	Yes > 0.01
I-15	Centre City Parkway to El Norte Parkway	171,330	8.0%	13,765	0.66	4	0.95	13.20%	2,565	1.092	F	0.012	Yes > 0.01
I-15	El Norte Parkway to SR-78	195,420	7.9%	15,381	0.66	4	0.95	10.00%	2,826	1.202	F	0.011	Yes > 0.01
I-15	SR-78 to W Valley Parkway	290,370	8.1%	23,632	0.60	7	0.95	10.00%	2,238	0.952	E	0.004	No < 0.01
I-15	W Valley Parkway to Auto Parkway	282,690	8.1%	23,007	0.60	7	0.95	10.00%	2,179	0.927	D	0.004	No
I-15	Auto Parkway to W Citracado Parkway	277,330	7.8%	21,509	0.60	7	0.95	10.00%	2,025	0.862	D	0.003	No

TABLE 9.10
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	Project Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	280,040	7.8%	21,719	0.60	7	0.95	7.00%	2,016	0.858	D	0.003	No
I-15	Via Rancho Parkway to Bernardo Drive	393,280	7.4%	28,944	0.58	7	0.95	7.00%	2,606	1.109	F	0.002	No < 0.01
I-15	Bernardo Drive to Rancho Bernardo Road	261,810	7.4%	19,268	0.58	7	0.95	7.00%	1,735	0.738	C	0.002	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	301,540	7.3%	22,139	0.54	7	0.95	7.00%	1,847	0.786	C	0.002	No
I-15	Bernardo Center Drive to Camino Del Norte	270,770	7.3%	19,880	0.54	7	0.95	7.00%	1,658	0.706	C	0.002	No

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

ML = Managed Lane.

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- I-15, between Centre City Parkway and El Norte Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
 - I-15, between El Norte Parkway and SR-78 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
 - I-15, between SR-78 and W Valley Parkway – LOS E, and the project traffic would not increase the V/C ratio by more than 0.01; and
 - I-15, between Via Rancho Parkway and Bernardo Drive – LOS F, and the project traffic would not increase the V/C ratio by more than 0.01.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the proposed project would result in traffic impacts at eight (8) of the above freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

9.3.3 Horizon Year without Road 3 Impact Significance and Mitigation

This section identifies required mitigation measures for roadway and freeway facilities that would be impacted by project-related traffic under Horizon Year Base Plus Project conditions without Road 3.

Roadway Segments

Based on the County planning level impact criteria, the project traffic would result in traffic impacts at four (4) of the study area roadway segments, including:

- Old Highway 395, between SR-76 and E. Dulin Road;
- Old Highway 395, between E. Dulin Road and W. Lilac Road;
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road;
- Valley Center Road, between Miller Road and Indian Creek Road.

A more detailed arterial analysis was conducted for these segments. The Highway Capacity Software (HCS) 2000 developed by McTrans was employed for a more detailed arterial analysis. The HCS arterial analysis methodology is based upon Chapter 15 of the Highway Capacity

Manual (HCM) 2000, which determines average travel speed and facility level of service according to roadway functional classification. The subject segments were evaluated with free-flow speeds (FFS) of 35-40 mph. **Table 9.11** displays the arterial travel speed and level of service for Old Highway 395, Lilac Road and Valley Center Road, and the respective analysis worksheets are included in **Appendix A1**.

TABLE 9.11
ARTERIAL LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Arterial	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
		Speed (mph)	LOS	Speed (mph)	LOS
Old Highway 395, between SR-76 and E. Dulin Road	40	21.1	D	18.6	D
Old Highway 395, between E. Dulin Road and W. Lilac Road	40	30.4	B	29.8	B
Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road	35	19.3	D	18.8	D
Valley Center Road, between Miller Road and Indian Creek Road	35	18.6	C	21.2	C

Source: Chen Ryan Associates; June 2013

As shown in the table above, all four (4) segments would operate at acceptable LOS D or better under Horizon Year Base Plus Project (without Road 3) conditions based on the arterial analysis. Therefore, it is appropriate to consider that no mitigation measures would be necessary at these locations.

Freeways

The additional traffic generated by the proposed Lilac Hills Ranch project would have significant impacts at the following eight (8) freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

The 2050 RTP indicates that four (4) toll lanes are planned to be added along I-15, between the Riverside County Boundary and SR-78 by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study. Furthermore, there are no planned I-15 (north of SR-78) mainline improvements as per SANDAG's 2050 RTP, thus the impacts would remain significant and unmitigable.

Table 9.12 summarizes potential impacts and recommended mitigation measures associated with the Lilac Hills Ranch project under Horizon Year with Road 3 conditions.

**TABLE 9.12
IMPACT AND MITIGATION SUMMARY
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)**

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
<i>Roadway Segment</i>		
Old Highway 395, between SR-76 and E. Dulin Road	Option 1 - None	<ul style="list-style-type: none"> Continue accepting LOS E/F as in the current GP Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.
Old Highway 395, between E. Dulin Road and W. Lilac Road	Option 1 - None	<ul style="list-style-type: none"> Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.
Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road	Option 1 - None	<ul style="list-style-type: none"> Continue accepting LOS E/F as in the current GP Acceptable arterial speed
	Option 2 – Improve to 6.2	Improve to acceptable LOS based on County's planning-level analysis.
Valley Center Road, between Miller Road and Indian Creek Road	Option 1 - None	<ul style="list-style-type: none"> Continue accepting LOS E/F as in the current GP Acceptable arterial speed
	Option 2 – Improve to 6.2	Improve to acceptable LOS based on County's planning-level analysis.
<i>Freeway</i>		
I-15, between Riverside County Boundary and Old Highway 395	None	No planned improvement – no feasible mitigation
I-15, between Old Highway 395 and SR-76	None	No planned improvement – no feasible mitigation
I-15, between SR-76 and Old Highway 395	None	No planned improvement – no feasible mitigation

TABLE 9.12
IMPACT AND MITIGATION SUMMARY
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Potentially Impacted Facility	Mitigation Measures	
	Recommendation	Rationale
I-15, between Old Highway 395 and Gopher Canyon Road	None	No planned improvement – no feasible mitigation
I-15, between Gopher Canyon Road and Deer Springs Road	None	No planned improvement – no feasible mitigation
I-15, between Deer Springs Road and Centre City Parkway	None	No planned improvement – no feasible mitigation
I-15, between Centre City Parkway and El Norte Parkway	None	No planned improvement – no feasible mitigation
I-15, between El Norte Parkway and SR-78	None	No planned improvement – no feasible mitigation

Source: Chen Ryan Associates; June 2013

10.0 Findings and Recommendations

This chapter provides a summary of the key findings and study recommendations, including the level of service results and traffic mitigation requirements associated with the various scenarios.

10.1 Summary of Roadway Segment Analysis

Tables 10.1 displays roadway segment level of service results for each of the study scenarios analyzed. Note that Old Highway 395 was analyzed as a two-lane highway under Existing, Existing Plus Project (all phases), and Existing Plus Cumulative Projects Plus Project conditions.

10.2 Summary of Intersection Analysis

Table 10.2 displays intersection level of service results for each of the analyzed scenarios. Note that based on the County's request, no intersection analysis was conducted under Horizon Year conditions.

10.3 Summary of Freeway Analysis

Table 10.3 displays freeway level of service results for each of the analyzed scenarios.

10.4 Summary of Ramp Intersection Capacity Analysis

Table 10.4 displays freeway ramp intersection capacity analysis level of service results for each of the scenarios analyzed.

10.5 Summary of Significant Impacts and Mitigation Recommendations

Based upon the significant impact criteria discussed in Section 2.8, **Table 10.5** summarizes identified significant project-related impacts and recommended mitigations to roadway segments, intersections, and freeway segments under each of the scenarios analyzed. Detailed rationale for mitigation measures are display at the end of each study scenario in previous chapters.

**TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS**

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
E. Dulin Road	Old Highway 395 to SR-76	A	B	B	B	B	B	D	C	D	C	D
W. Lilac Road	Camino Del Rey to Camino Del Cielo	A	A	A	A	A	A	A	C	C	C	C
W. Lilac Road	Camino Del Cielo to Old Highway 395	A	A	A	A	A	A	A	C	D	C	C
W. Lilac Road	Old Highway 395 to Main Street	A	A	A	F	D	D	F	C	E	A	D
W. Lilac Road	Main Street to Street "F"	A	A	A	A	A	A	A	C	F	B	B
W. Lilac Road	Street "F" to Road 3 (Running Creek Road)	A	A	A	A	A	A	A	C	F	B	A
W. Lilac Road	Road 3 (Running Creek Road)	A	A	A	A	A	A	A	A	A	A	A
W. Lilac Road	Covey Lane to Circle R Drive	A	A	A	A	A	A	A	A	A	A	A
W. Lilac Road	Circle R Drive to Lilac Road	A	A	A	A	A	A	A	A	A	A	A
Camino Del Cielo	Camino Del Rey to W. Lilac Road	A	A	A	A	A	A	A	C	C	C	C
Olive Hill Road	Shamrock Road to SR-76	A	A	A	A	A	A	A	D	D	D	D
Camino Del Rey	SR-76 to Old River Road	D	D	D	D	D	D	D	B	B	B	B
Camino Del Rey	Old River Road to W. Lilac Road	D	D	D	D	D	D	E	A	A	A	A
Camino Del Rey	W. Lilac Road to Camino Del Cielo	C	C	C	C	C	C	D	A	A	A	A
Camino Del Rey	Camino Del Cielo to Old Highway 395	A	A	A	A	A	A	A	C	C	C	C
Gopher Canyon Road	E. Vista Way to I-15 SB Ramps	E	E	E	E	E	E	F	B	B	B	B

TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
Gopher Canyon Road	I-15 SB Ramps to I-15 NB Ramps	A	A	A	A	A	A	B	B	B	B	B
Gopher Canyon Road	I-15 NB Ramps to Old Highway 395	A	A	A	A	A	A	B	B	B	B	B
Circle R Drive	Old Highway 395 to Mountain Ridge Road	B	B	C	C	C	C	D	C	D	C	D
Circle R Drive	Mountain Ridge Road to W. Lilac Road	A	A	B	B	B	B	B	B	B	A	A
Old Castle Road	Old Highway 395 to Lilac Road	C	C	C	C	C	C	D	C	C	C	C
E. Vista Way	SR-76 to Gopher Canyon Road	E	E	E	E	E	E	F	B	B	B	B
E. Vista Way	Gopher Canyon Road to Osborne Street	F	F	F	F	F	F	F	C	C	C	C
Old River Road	SR-76 to Camino Del Rey	B	C	C	C	C	C	C	C	C	C	C
Old Highway 395*	Pala Mesa Drive to SR-76	D or better	D or better	D or better	D or better	D or better	D or better	D or better	A	A	B	B
Old Highway 395*	SR-76 to E. Dulin Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	E accepted at LOS E/F	E accepted at LOS E/F	E accepted at LOS E/F	E accepted at LOS E/F
Old Highway 395*	E. Dulin Road to W. Lilac Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	E	E	D	E
Old Highway 395*	W. Lilac Road to I-15 SB Ramps	D or better	D or better	D or better	D or better	D or better	D or better	D or better	B	D	B	D
Old Highway 395*	I-15 SB Ramps to I-15 NB Ramps	D or better	D or better	D or better	D or better	D or better	D or better	D or better	A	B	A	B

TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
Old Highway 395*	I-15 NB Ramps to Camino Del Rey	D or better	D or better	D or better	D or better	D or better	D or better	D or better	B	B	B	B
Old Highway 395*	Camino Del Rey to Circle R Drive	D or better	D or better	D or better	D or better	D or better	D or better	D or better	B	B	B	C
Old Highway 395*	Circle R Drive to Gopher Canyon Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	C	D	C	D
Old Highway 395*	Gopher Canyon Road to Old Castle Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	C	C	C	D
Champagne Boulevard	Old Castle Road to Lawrence Welk Drive	B	B	B	B	B	B	C	B	B	B	B
Pankey Road	Pala Mesa Drive to SR-76	A	A	A	A	A	A	F	C	B	A	B
Lilac Road	Couser Canyon Road to W. Lilac Road	A	A	A	A	A	A	A	D	D	C	C
Lilac Road	W. Lilac Road to Old Castle Road	A	A	A	A	A	A	A	D	D	D	D
Lilac Road	Old Castle Road to Anthony Road	D	D	D	D	D	D	E	D	D	D	D
Lilac Road	Anthony Road to New Road 19 (east of Betsworth Road)	D	D	D	D	D	D	D	B	B	D	D
Lilac Road	New Road 19 (east of Betsworth Road) to Valley Center Road	D	D	D	D	D	D	D	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F
Valley Center Road	Woods Valley Road to Lilac Road	C	C	C	C	C	C	D	C	C	C	C
Valley Center Road	Lilac Road to Miller Road	B	B	B	B	B	B	C	D	D	E	E

TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
Valley Center Road	Miller Road to Indian Creek Road	C	C	C	C	C	C	D	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F
Valley Center Road	Indian Creek Road to Cole Grade Road	C	C	C	C	C	C	D	C	C	D	D
Valley Center Road	Cole Grade Road to Vesper Road	D	D	D	D	D	D	D	A	A	A	A
Miller Road	Misty Oak Road to Valley Center Road	A	A	A	A	A	A	A	A	A	A	A
Cole Grade Road	Fruitvale Road to Valley Center Road	D	D	D	D	D	D	E	A	B	B	B

Source: Chen Ryan Associates; June 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

E = Existing

P = Project

Ph = Phase

C = Cumulative Projects

H = Horizon Year

*Old Highway 395 was analyzed as a two-lane highway prior to the Horizon Year analyses.

TABLE 10.2
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P
	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM
1. E. Vista Way / Gopher Canyon Road	C / D	C / D	C / D	C / D	C / D	C / D	C / F
2. SR-76 / Old River Road/E. Vista Way	E / D	E / D	E / D	E / D	E / D	E / D	F / F
3. SR-76 / Olive Hill Road/Camino Del Rey	D / E	D / E	D / E	D / E	D / E	D / E	F / F
4. Old River Road / Camino Del Rey	D / B	D / B	D / B	D / B	D / B	D / B	F / C
5. W. Lilac Road / Camino Del Rey	C / B	C / B	C / B	C / B	C / B	C / B	C / B
6. Old Highway 395 / SR-76	D / D	D / D	D / D	D / D	D / D	D / D	F / F
7. Pankey Road / SR-76	B / C	B / C	B / C	B / C	B / C	B / C	F / F
8. Old Highway 395 / E. Dulin Road	B / B	B / B	B / B	C / D	C / C	C / D	F / F
9. Old Highway 395 / W. Lilac Road	C / B	C / C	C / D	F / F	B / C	C / C	F / F
10. I-15 SB Ramps / Old Highway 395	B / B	B / B	B / B	B / B	B / C	B / C	E / F
11. I-15 NB Ramps / Old Highway 395	A / B	B / B	B / B	B / C	B / C	B / C	C / F
12. Old Highway 395 / Camino Del Rey	B / B	B / B	B / B	B / B	B / B	B / B	B / C
13. Old Highway 395 / Circle R Drive	C / C	C / C	C / D	D / D	E / F	A / A	F / F
14. I-15 SB Ramps / Gopher Canyon Road	F / F	F / F	F / F	A / A	A / A	A / A	F / F
15. I-15 NB Ramps / Gopher Canyon Road	D / F	D / F	D / F	A / A	A / A	A / B	F / F
16. Old Highway 395 / Gopher Canyon Road	B / A	B / A	B / B	B / B	B / B	B / B	C / C
17. Old Highway 395 / Old Castle Road	B / B	B / B	B / B	B / B	B / B	B / B	B / B
18. W. Lilac Road / Covey Lane	B / A	A / A	A / A	A / B	A / A	A / B	B / B
19. Mountain Ridge Road / Circle R Drive	A / A	A / A	A / A	A / B	A / B	B / C	B / B
20. W. Lilac Road / Circle R Drive	A / A	A / A	A / A	B / B	B / A	B / C	B / B
21. Lilac Road / W. Lilac Road	A / A	A / B	A / B	B / B	B / B	B / B	B / B

TABLE 10.2
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P
	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM
22. Lilac Road / Old Castle Road	B / C	B / C	B / C	B / C	B / C	B / C	B / D
23. Valley Center Rd / Lilac Road	B / C	B / C	B / C	B / C	B / C	B / C	D / D
24. Miller Road / Valley Center Road	C / D	C / D	C / D	C / D	C / D	C / D	C / F
25. Cole Grade Road / Valley Center Road	C / C	C / C	C / D	C / C	C / D	C / D	D / D
26. Street "O" / W. Lilac Road/Main Street	DNE	A / A	A / A	A / A	A / B	A / B	B / B
27. Main Street / Street "C"	DNE	A / A	A / A	A / A	A / A	A / A	A / A
28. Lilac Hills Ranch Road / Main Street North	DNE	DNE	DNE	A / A	A / A	A / A	A / A
29. Lilac Hills Ranch Road / Main Street South	DNE	DNE	DNE	A / A	A / A	A / B	A / A
30. Street "Z" / Main Street	DNE	A / A	A / A	A / A	A / A	A / A	A / A
31. W. Lilac Road/Street "F" / Main Street	DNE	A / A	A / A	A / A	A / A	A / A	A / A

Source: Chen Ryan Associates; May 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

DNE = Does Not Exist

E = Existing

P = Project

Ph = Phase

C = Cumulative Projects

**TABLE 10.3
SUMMARY OF FREEWAY SEGMENT LEVEL OF SERVICE RESULTS**

Freeway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/o Road 3	H+P w/o Road 3	Horizon w/o Road 3	H+P w/o Road 3
I-15	Riverside County Boundary to Old Highway 395	D	D	D	D	D	D	F	F	F	F	F
I-15	Old Highway 395 to SR-76	D	D	D	D	D	D	F	F	F	F	F
I-15	SR-76 to Old Highway 395	C	C	C	C	C	C	F	F	F	F	F
I-15	Old Highway 395 to Gopher Canyon Rd	C	C	C	C	C	C	F	F	F	F	F
I-15	Gopher Canyon Rd to Deer Springs Rd	C	C	C	C	C	C	F	F	F	F	F
I-15	Deer Springs Rd to Centre City Pkwy	C	C	C	C	C	C	F	F	F	F	F
I-15	Centre City Pkwy to El Norte Pkwy	C	C	C	C	C	C	F	F	F	F	F
I-15	El Norte Pkwy to SR-78	C	C	C	C	C	C	F	F	F	F	F
I-15	SR-78 to W Valley Pkwy	B	C	C	C	C	C	C	F	F	F	F
I-15	W Valley Pkwy to Auto Pkwy	B	B	B	B	B	B	C	F	F	F	F
I-15	Auto Pkwy to W Citracado Pkwy	B	B	B	B	B	B	B	F	F	F	F
I-15	W Citracado Pkwy to Via Rancho Pkwy	B	B	B	B	B	B	C	E	E	E	E
I-15	Via Rancho Pkwy to Bernardo Dr	B	B	B	B	B	B	C	F	F	F	F

TABLE 10.3
SUMMARY OF FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Freeway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/o Road 3	H+P w/o Road 3	Horizon w/o Road 3	H+P w/o Road 3
I-15	Bernardo Dr to Rancho Bernardo Rd	B	B	B	B	B	B	B	E	E	E	E
I-15	Rancho Bernardo Rd to Bernardo Center Dr	B	B	B	B	B	B	B	F	F	F	F
I-15	Bernardo Center Dr to Camino Del Norte	B	B	B	B	B	B	B	E	E	E	E

Source: Chen Ryan Associates; January 2013

Notes:

Bold letter indicates unacceptable LOS E or F.

E = Existing

P = Project

Ph = Phase

C = Cumulative Projects

H = Horizon Year

TABLE 10.4
SUMMARY OF RAMP INTERSECTION CAPACITY ANALYSIS

Ramp Intersection	Peak Hour	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P
SR-76 / Old River Road/E. Vista Way	AM	Over	Over	Over	Over	Over	Over	Over
	PM	At	At	At	At	At	At	Over
SR-76 / Olive Hill Road/Camino Del Rey	AM	At	At	At	At	At	At	Over
	PM	At	At	At	At	At	At	Over
SR-76 / Old Highway 395	AM	Under	Under	Under	Under	Under	Under	Over
	PM	Under	Under	Under	Under	Under	Under	Over

Source: Chen Ryan Associates; January 2013

Notes:

E = Existing

P = Project

Ph = Phase

C = Cumulative Projects

**TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES**

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project	Horizon + Project (w/ Road 3)	Horizon + Project (w/o Road 3)
<i>Roadway Segment</i>								
Camino Del Rey, Old River Road to W. Lilac Road	-	-	-	-	-	Cumulative Impact Improve to 4.2B	-	-
W. Lilac Road, Old Highway 395 to Main Street	-	-	Direct Impact Improve to 2.2C	-	-	Cumulative Impact Improve to 2.2C	General Plan Inconsistency <u>Recommended Mitigation</u> <i>None</i> - Roundabouts increase operational capacity; improving pedestrian and bicycle facility via multi-purpose trail; acceptable arterial speed; R-O-W constrains at the I-15 overpass.	-
W. Lilac Road, Main Street to Street "F"	-	-	-	-	-	-	General Plan Inconsistency <u>Recommended Mitigation</u> <i>None</i> - Road 3 is likely to be eliminated from the Mobility Element network – this road would operate at acceptable LOS as a 2.2F.	-
W. Lilac Road, Street "F" to Road 3	-	-	-	-	-	-	General Plan Inconsistency <u>Recommended Mitigation</u> <i>None</i> - Road 3 is likely to be eliminated from the Mobility Element network – this road would operate at acceptable LOS as a 2.2F.	-
Old Highway 395, SR-76 to E. Dulin Road	-	-	-	-	-	-	General Plan Inconsistency <u>Recommended Mitigation</u> <i>Option 1:</i> <i>None</i> - Continue accepting LOS E/F as the current GP with acceptable arterial speed. <i>Option 2:</i> Improve to 4.2B with acceptable LOS based on County's planning-level analysis.	General Plan Inconsistency <u>Recommended Mitigation</u> <i>Option 1:</i> <i>None</i> - Continue accepting LOS E/F as the current GP with acceptable arterial speed. <i>Option 2:</i> Improve to 4.2B with acceptable LOS based on County's planning-level analysis.
Old Highway 395, E. Dulin Road to W. Lilac Road	-	-	-	-	-	-	General Plan Inconsistency <u>Recommended Mitigation</u> <i>Option 1:</i> <i>None</i> - Acceptable arterial speed. <i>Option 2:</i> Improve to 4.2B with acceptable LOS based on County's planning-level analysis.	General Plan Inconsistency <u>Recommended Mitigation</u> <i>Option 1:</i> <i>None</i> - Acceptable arterial speed. <i>Option 2:</i> Improve to 4.2B with acceptable LOS based on County's planning-level analysis.
Gopher Canyon Road, E. Vista Way to I-15 SB Ramps	-	-	Direct Impact No Mitigation Required	Direct Impact No Mitigation Required	Direct Impact No Mitigation Required	Cumulative Impact Widen to 4.1B	-	-
E. Vista Way, SR-76 to Gopher Canyon Road	-	-	-	-	Direct Impact No Mitigation Required	Cumulative Impact Widen to 4.1A	-	-

**TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES**

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project	Horizon + Project (w/ Road 3)	Horizon + Project (w/o Road 3)
E. Vista Way, Gopher Canyon Road to Osborne Street	-	-	Direct Impact No Mitigation Required	Direct Impact No Mitigation Required	Direct Impact No Mitigation Required	Cumulative Impact Widen to 4.1A	-	-
Pankey Road, Pala Mesa Drive to SR-76	-	-	-	-	-	Cumulative Impact Widen to 4.2B	-	-
Lilac Road, Old Castle Road to Anthony Road	-	-	-	-	-	Cumulative Impact Widen to 2.1C	-	
Lilac Road, New Road 19 (east of Betsworth Road) to Valley Center Road	-	-	-	-	-	-	-	General Plan Inconsistency <u>Recommended Mitigation</u> <i>Option 1: None</i> - Continue accepting LOS E/F as the current GP with acceptable arterial speed. <i>Option 2:</i> Improve to 6.2 with acceptable LOS based on County's planning-level analysis.
Valley Center Road, Miller Road to Indian Creek Road	-	-	-	-	-	-	-	General Plan Inconsistency <u>Recommended Mitigation</u> <i>Option 1: None</i> - Continue accepting LOS E/F as the current GP with acceptable arterial speed. <i>Option 2:</i> Improve to 6.2 with acceptable LOS based on County's planning-level analysis.
Cole Grade Road, Fruitvale Road and Valley Center Road	-	-	-	-	-	Cumulative Impact Widen to 4.2A	-	-
Intersection								
1. E. Vista Way / Gopher Canyon Road	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> +1NBT; +1NBR +1SBT Conversion of WB L-T-R shared lane to T-R shared lane & +1WBL 	N/A	N/A
2. SR-76 / Old River Road/E. Vista Way	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> +1NBR & +1NBT +1SBT Conversion of EB L-T-R shared lane to EBTR& +1EBL &+1EBR Conversion of WB L-T shared lane to WB T-R shared lane & +2WBL Split to protected phase 	N/A	N/A

**TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES**

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project	Horizon + Project (w/ Road 3)	Horizon + Project (w/o Road 3)
3. SR-76 / Olive Hill Road/Camino Del Rey	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> +1NBT +1SBT & +1SBL +1EBR +1WBR Split to protected phase 	N/A	N/A
6. Old Highway 395 / SR-76	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> Conversion of NB L-T-R shared lane to NBT & +1NBL & +1NBR Conversion of SB L-T-R shared lane to SB T-R shared lane & +2SBL Conversion of EBTR shared lane to EBT & +1EBR Split to protected phase 	N/A	N/A
7. Pankey Road / SR-76	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> Signalization Conversion of NB L-T-R shared lane to NBT & +2NBL & +1NBR Conversion of SB L-T-R shared lane to SBT & +1SBL & +2SBR (RTOL) +1EBL; conversion of EB T-R shared lane to EBT & +1EBR Conversion of WB T-R shared lane to WBT & +1WBR 	N/A	N/A
8. Old Highway 395 / E. Dulin Road	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> Signalization 	N/A	N/A
9. Old Highway 395 / W. Lilac Road	-	-	Direct Impact <ul style="list-style-type: none"> Signalization 	-	-	Cumulative Impact <ul style="list-style-type: none"> Signalization +1EBL & +1WBL Protected phase 	N/A	N/A
10. I-15 SB Ramps / Old Highway 395	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> Signalization +1SBR 	N/A	N/A
11. I-15 NB Ramps / Old Highway 395	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none"> Signalization +1NBL 	N/A	N/A
13. Old Highway 395 / Circle R Drive	-	-	-	Direct Impact <ul style="list-style-type: none"> Signalization 	-	Cumulative Impact <ul style="list-style-type: none"> Signalization 	N/A	N/A

TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project	Horizon + Project (w/ Road 3)	Horizon + Project (w/o Road 3)
14. I-15 SB Ramps / Gopher Canyon Road	-	Direct Impact <ul style="list-style-type: none">Signalization	-	-	-	Cumulative Impact <ul style="list-style-type: none">Signalization+1EBT+1SBR	N/A	N/A
15. I-15 NB Ramps / Gopher Canyon Road	-	Direct Impact <ul style="list-style-type: none">Signalization	-	-	-	Cumulative Impact <ul style="list-style-type: none">Signalization+1NBR	N/A	N/A
24. Miller Road / Valley Center Road	-	-	-	-	-	Cumulative Impact <ul style="list-style-type: none">Signalization	N/A	N/A
<i>Freeway Segment</i>								
I-15, Riverside County Boundary to Old Highway 395	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation
I-15, Old Highway 395 to SR-76	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation
I-15, SR-76 to Old Highway 395	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation
I-15, Old Highway 395 to Gopher Canyon Rd	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation
I-15, Gopher Canyon Rd to Deer Springs Rd	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation
I-15, Deer Springs Rd to Centre City Pkwy	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation
I-15, Centre City Pkwy to El Norte Pkwy	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation
I-15, El Norte Pkwy to SR-78	-	-	-	-	-	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation	Cumulative Impact No feasible mitigation

Source: Chen Ryan Associates; May 2013Notes:
E = Existing
P = Project
N/A = Not Analyzed

11.0 Construction Traffic

This chapter identifies potential traffic impacts associated with the Lilac Hills Ranch project construction traffic.

11.1 Construction Related Traffic Generation

Project construction is expected to be phased over up to 20 years. It is assumed that the worst case scenario occurs during the last project phase (Phase E) after which previous phases (will be occupied. Therefore, Phase D plus construction traffic is assumed as the worst case scenario.

All earthwork associated with the construction of this project will be balanced on-site; therefore, no import or export of soil is anticipated. The construction traffic analyzed here mainly focuses on construction material transport activities and trips generated by construction workers. Neither construction material transport activities nor construction workers will generate traffic during the peak commute hours (both AM and PM) since all deliveries and pick-ups are planned to occur during off-peak hours, while construction workers are scheduled to arrive before 7 a.m. and leave by 3:30 p.m.. Therefore, no intersection peak hour analysis is necessary for assessing potential construction related traffic impacts.

Based upon information provided by RECON Environmental, Inc., approximately 66 daily truck trips and 372 daily construction worker trips will be generated by the last project construction phase. **Table 11.1** displays the assumed construction related vehicle trip generation.

TABLE 11.1
PROJECT CONSTRUCTION TRIP GENERATION

Type	Daily Trips	PCE	Daily Vehicle Trips
Truck	66	2.5	165
Construction Worker	372	1.0	372
Total	-	-	537

Source: RECON Environmental, Inc., Chen Ryan Associates: January 2013

As shown in the table, a total of 537 daily vehicle trips would be generated during the last construction phase.

Additionally, the project is expected to generate 6 truck trips (equivalent to 15 vehicle trips) per day from waste water transport activities between the project site to the Moosa Water Reclamation Facility located along Circle R Drive, just east of Old Highway 395. Note that this waste water transport activity only happens for the first 100 units, after which a temporary line from the project site down to the Moosa facility will be construed via Mountain Ridge Road to Circle R Drive.

11.2 Construction Related Traffic Impacts

As described previously in Section 11.1, the worst case scenario during construction represents “Phase D Plus Construction Traffic”. **Table 11.2** displays the total daily trips generate by the worst case scenario.

TABLE 11.2
WORST CASE TRIP GENERATION
DURING CONSTRUCTION

Scenario	Daily Trips
Phase D (displayed in Table 4.7)	12,936
Construction	537
Total	13,473

Source: Chen Ryan Associates: January 2013

As shown above, the worst case scenario (Phase D Plus Construction) would generate a total of 13,473 daily trips. Project impacts for both Phase D and Phase E (project buildout) were discussed in Chapter 5. It is reasonable to believe that the worst case scenario associated with construction impacts would be less than impacts associated with buildout of the project since Phase E (buildout) would generate a total of 15,151 external daily trips (greater than 13,473 ADT). It can be concluded that no additional (to Phase E) impacts associated with construction related traffic would occur to the study area roadway network.

12.0 No-School Alternative

This chapter provides a discussion of the “No School” alternative and how this alternative would affect the study area network.

12.1 No-School Project Trip Generation

It is important to note that no other trip generating land uses will be proposed in place of the school, in other words, the proposed “with school” land uses represents the worst case in terms of project trips generation, as shown in Table 4.9. **Table 12.1** displays the total and external project traffic generated by the “No School” alternative. As shown, a total of 18,334 daily trips including 1,316 AM peak hour trips and 1,730 PM peak hour trips would be generated by project buildout “without school” as opposed to the 19,428 daily trips generated by the proposed “with school” scenario.

12.2 Students Trip Generation, Distribution, and Assignment

The residential trip generation rates provided in the SANDAG’s *Guide to Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, April 2002) already account for all trip purposes including home-work, home-shopping, home-school, etc. However, to address potential concerns of school needs not being met on-site, an AM peak hour intersection analysis was conducted assuming all students from the Lilac Hills Ranch project would travel to Valley Center proper. PM peak hour intersection operation was not analyzed since school dismissals occur prior to the commute peak hour (4 p.m. – 6 p.m.).

The Valley Center-Pauma Unified School District uses 0.5 elementary school students per household and 0.2 high school students per household factors to estimate the number of students generated by future developments. **Table 12.2** displays the total number of students expected to attend school. SANDAG’s *Guide to Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, April 2002) was utilized for student trip generation.

As shown in Table 12.2, the Lilac Hills Ranch project would generate 256 high school students and 639 elementary school students resulting in 1,354 average daily trips with 393 trips in the AM peak hour.

The AM peak hour trips generated by students needing to attend school outside of the project site were distributed to Valley Center proper along W. Lilac Road, Lilac Road and Valley Center Road. This should represent the worst case scenario for evaluating potential student traffic impacts on the transportation network in Valley Center. These trips were added to the Existing Plus Project Buildout (Phase E) with “No School” scenario. **Figure 12.1** displays both the route to school and the AM peak hour intersection volumes.

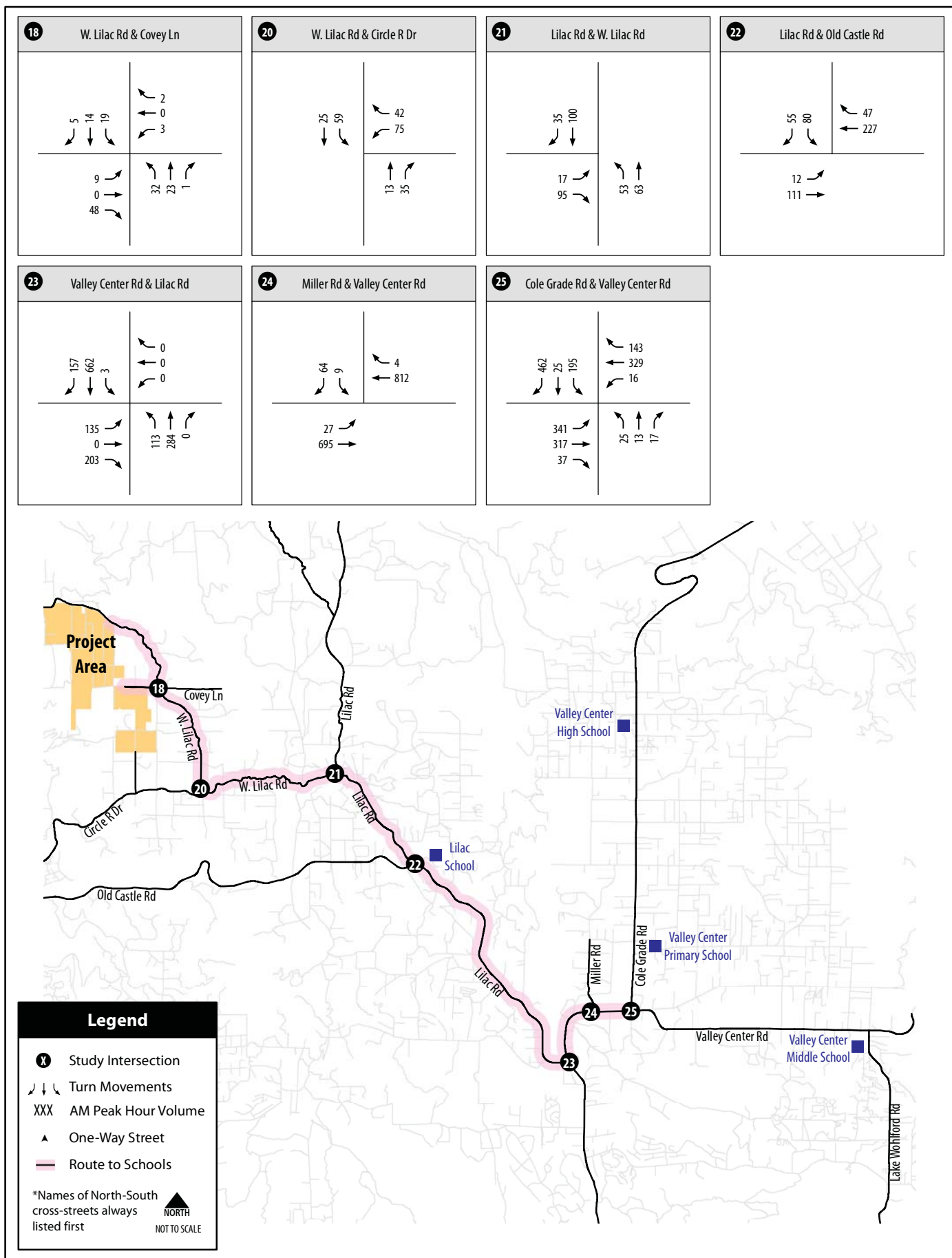
TABLE 12.1
LILAC HILLS RANCH INTERNAL AND EXTERNAL PROJECT TRIPS
NO SCHOOL ALTERNATIVE

Land Use	Quantity	Total Trips				Internal Trips				External Trips		
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Single Family	903 DU	9,030	722 (217-in / 506-out)	903 (632-in / 271-out)	10%	903	72 (22-in / 51-out)	90 (63-in / 27-out)	90%	8,127	650 (195-in / 455-out)	813 (569-in / 244-out)
Multi-Family	375 DU	2,250	180 (36-in / 144-out)	203 (142-in / 61-out)	10%	225	18 (4-in / 14-out)	20 (14-in / 6-out)	90%	2,025	162 (32-in / 130-out)	182 (128-in / 55-out)
Senior Community	468 DU	1,872	94 (37-in / 56-out)	131 (79-in / 52-out)	10%	187	9 (4-in / 6-out)	13 (8-in / 5-out)	90%	1,685	84 (34-in / 51-out)	118 (71-in / 47-out)
Assisted Living	200 bed	500	20 (12-in / 8-out)	40 (20-in / 20-out)	10%	50	2 (1-in / 1-out)	4 (2-in / 2-out)	90%	450	18 (11-in / 7-out)	36 (18-in / 18-out)
Specialty/Strip Commercial	61.5 KSF	2,460	74 (44-in / 30-out)	221 (111-in / 111-out)	50%	1,230	37 (22-in / 15-out)	111 (55-in / 55-out)	50%	1,230	37 (22-in / 15-out)	111 (55-in / 55-out)
Office	28.5 KSF	399	60 (54-in / 6-out)	60 (12-in / 48-out)	10%	40	6 (5-in / 1-out)	6 (1-in / 5-out)	90%	359	54 (48-in / 5-out)	54 (11-in / 43-out)
Country Inn / B&B	50 room	450	36 (14-in / 22-out)	41 (24-in / 16-out)	10%	45	4 (1-in / 2-out)	4 (2-in / 2-out)	90%	405	32 (13-in / 19-out)	36 (22-in / 15-out)
Church	10.7 AC	321	16 (10-in / 6-out)	26 (13-in / 13-out)	50%	161	8 (5-in / 3-out)	13 (6-in / 6-out)	50%	161	8 (5-in / 3-out)	13 (6-in / 6-out)
Elementary School (K-5)	0 student	0	0 (0-in / 0-out)	0 (0-in / 0-out)	80%	0	0 (0-in / 0-out)	0 (0-in / 0-out)	20%	0	0 (0-in / 0-out)	0 (0-in / 0-out)
Middle School (6-8)	0 student	0	0 (0-in / 0-out)	0 (0-in / 0-out)	80%	0	0 (0-in / 0-out)	0 (0-in / 0-out)	20%	0	0 (0-in / 0-out)	0 (0-in / 0-out)
Recreation Center	40.0 KSF	915	108 (57-in / 51-out)	95 (38-in / 57-out)	50%	458	54 (29-in / 25-out)	48 (19-in / 29-out)	50%	458	54 (29-in / 25-out)	48 (19-in / 29-out)
Neighborhood/ County Park	23.8 AC	119	5 (2-in / 2-out)	10 (5-in / 5-out)	80%	95	4 (2-in / 2-out)	8 (4-in / 4-out)	20%	24	1 (0-in / 0-out)	2 (1-in / 1-out)

TABLE 12.1
LILAC HILLS RANCH INTERNAL AND EXTERNAL PROJECT TRIPS
NO SCHOOL ALTERNATIVE

Land Use	Quantity	Total Trips				Internal Trips				External Trips		
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Water Reclamation	2.4 AC	14	2 (1-in / 1-out)	1 (1-in / 1-out)	50%	7	1 (0-in / 0-out)	1 (0-in / 0-out)	50%	7	1 (0-in / 0-out)	1 (0-in / 0-out)
Recycling Center	0.6 AC	4	0 (0-in / 0-out)	0 (0-in / 0-out)	50%	2	0 (0-in / 0-out)	0 (0-in / 0-out)	50%	2	0 (0-in / 0-out)	0 (0-in / 0-out)
Total		18,334	1,316 (485-in / 831-out)	1,730 (1076-in / 655-out)	19%	3,402	215 (95-in / 120-out)	317 (176-in / 141-out)	81%	14,932	1,102 (390-in / 712-out)	1,413 (900-in / 513-out)

Source: Chen Ryan Associates; January 2013



Lilac Hills Ranch Traffic Impact Study

Figure 12-1

TABLE 12.2
LILAC HILLS RANCH STUDENT TRIP GENERATION

Land Use	# of Residential Units	Student Generation Factor	# of Students	Trip Rate	Daily Trips	AM Peak Hour	
						%	Trips
Elementary School	1,278*	.5 / DU	639	1.6 / Student	1,022	32%	327 (196-in / 131-out)
High School		.2 / DU	256	1.3 / Student	332	20%	66 (46-in / 20-out)
Total			895		1,354		393 (243-in / 151-out)

Source: Valley Center-Pauma Unified School District, SANDAG Trip Generation Manual, Chen Ryan Associates; January 2013

Note:

1,278 DU = Total of 1,746 DU – 468 Senior DU.

12.3 Project Buildout (Phase E) without On-Site School Traffic Impact

Table 12.3 displays AM peak hour intersection level of service and average vehicle delay results under Existing Plus Project (Phases E) without On-Site School conditions. Level of service calculation worksheets are provided in **Appendix AJ**.

TABLE 12.3
AM PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT BUILDOUT WITHOUT ON-SITE SCHOOL CONDITIONS

Intersection	Traffic Control	With Project Buildout no On-Site School		Existing		Change in Delay (sec.)	Direct Impact?
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS		
18. W. Lilac Road / Covey Lane	TWSC	11.5	B	8.8	B	2.7	No
20. W. Lilac Road / Circle R Drive	OWSC	23.2	C	9.3	A	13.9	No
21. Lilac Road / W. Lilac Road	OWSC	17.0	C	9.6	A	7.4	No
22. Lilac Road / Old Castle Road	OWSC	30.5	D	11.8	B	18.7	No
23. Valley Center Rd / Lilac Road	Signal	13.4	B	10.5	B	2.9	No
24. Miller Road / Valley Center Road	OWSC	23.1	C	16.9	C	6.2	No
25. Cole Grade Road / Valley Center Road	Signal	35.6	D	31.1	C	4.5	No

Source: Chen Ryan Associates; January 2013

Notes:

OWSC = One-Way Stop Controlled.

TWSC = Two-Way Stop Controlled.

For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

As shown in table 12.3, all intersections along the route to school (in Valley Center proper) would operate at LOS D or better during the AM peak hour under the Existing Plus Project Buildout (Phase E) without On-Site School scenario. Student traffic would not result in any significant impact to Valley Center intersections along the assumed school route if no schools are being built on-site of the Lilac Hills Ranch project.

13.0 Weekend Church Traffic

This chapter identifies and documents potential traffic impacts associated with weekend church traffic since churches generate higher traffic on weekends, particularly Sundays. During days of worship, the northern gate at the senior community entrance (Covey Lane) will be opened to provide internal circulation and access for residents living on the north side of Covey Lane. Mountain Ridge Road, a private road with a 2,500 ADT design capacity, provides primary and direct access for churchgoers from outside of the Lilac Hills Ranch development. Given the nature of non-peak hour services of most churches, this chapter focuses on the weekend roadway (Mountain Ridge Road) daily traffic, rather than intersection peak hour conditions.

It is very important to note that unlike churches, most other land uses generate less traffic on the weekend when compared to weekdays. For example, according to the *ITE Trip Generation Manual 9th Edition* Land Use Code 251, a senior detached unit generates approximately 63% of all trips on Sunday when compared to weekdays (2.32 vs. 3.68). The Lilac Hills Ranch gated senior community has 468 senior units and will primarily take access from Mountain Ridge Road.

Table 13.1 displays the estimated weekend daily traffic along Mountain Ridge Road when the proposed church is in service.

TABLE 13.1
MOUNTAIN RIDGE ROAD WEEKEND ADT
WITH CHURCH SERVICES

Mountain Ridge Road	Daily Traffic	Source or Calculation
Existing Weekend	130	Data collected by NDS on 9/15 and 9/16/2012, included in Appendix AK.
Weekday Project Buildout Trip Assignment	2,060	Figure 4-14A
Additional Weekend Church Traffic	480	<ul style="list-style-type: none"> quadruple church trip generation rate on Sunday @ 120/acre (30/acre weekday -> $10.7 \times 120 = 1,284$ ADT subtract church trips already included in trip assignment -> $1,284 - 321 = 963$ ADT assume 50% churchgoers live in Lilac Hills Ranch development -> 481 ADT
Lower Weekend Trip Generation by Senior Housing	-620	<ul style="list-style-type: none"> senior community weekday trip generation rate -> 4/du Sunday trip generation derived from SANDAG rate -> $4 \times 63\% = 2.52/\text{du}$ 468 senior detached units in Lilac Hills Ranch Sunday traffic generated by senior units -> $468 \times 2.52 = 1,180$ ADT weekday traffic generated by senior units -> $468 \times 4 = 1,872$ ADT approximately 90% of the senior units would utilize Mountain Ridge Road
Total Weekend	2,050	Sum of above.

Source: NDS, SANDAG Trip Generation Manual, Chen Ryan Associates; January 2013

As shown, Mountain Ridge Road is estimated to carry a maximum of 2,050 ADT on the weekend, within the 2,500 ADT design capacity for this road. Therefore, the Lilac Hills Ranch church weekend trips would not have a significant impact on Mountain Ridge Road.

14.0 North County Specific Residential Trip Generation and Effects

LOS Engineering has conducted trip generation surveys (included in **Appendix AL**) for both single family and multi-family uses in North County, specifically in the communities of Valley Center, Bonsall, and Fallbrook. Based upon our review of the *LOS Engineering's* analysis, it appeared that the surveyed North County specific residential trip generation rates represent a more recent and relevant trip generation to the proposed project location and surrounding environments when compared to the current SANDAG trip generation rates for the following reasons:

- Outdated (residential has five data points from 1994 and one from 1998 while multifamily has four data points from 1980, two from 1981, and two from 1998);
- Single family rates based on data collected south of SR-56 with one data point from Oceanside; and
- Multi-family rates based on data collected south of SR-56 with one data point from Carlsbad (as shown in Figure 2).

14.1 Trip Generation Comparison

Table 14.1 displays both the SANDAG and the North County specific residential trip generation rates.

TABLE 14.1
RESIDENTIAL TRIP GENERATION RATE COMPARISONS

Land Use	Rate Source	Daily Rate	AM Peak Hour		PM Peak Hour	
			%	(In : Out) Ratio	%	(In : Out) Ratio
Single Family	SANDAG	10 / DU	8%	(3 : 7)	10%	(7 : 3)
	NC Specific	6.9 / DU	9.4%	(2.5 : 7.5)	8.7%	(6.3 : 3.7)
Multi-Family (> 20 DU / AC)	SANDAG	6 / DU	8%	(2 : 8)	9%	(7 : 3)
	NC Specific	4.8 / DU	7.9%	(3.4 : 6.6)	9.1%	(6.2 : 3.8)

Source: SANDAG Trip Generation Manual, LOS Engineering; January 2013

As shown, the surveyed North County specific residential trip generation rates are generally lower than the SANDAG trip generation rates by 20-30%. When apply these rates to the proposed project land uses, a total of 12,226 external daily trips would be generated by project buildout, including 1,014 AM peak hour trips and 1,073 PM peak hour trips.

External project trip generation based on the SANDAG rates were discussed in Chapter 4 of this report and utilized as the basis for all impact analyses in order to provide the worst case scenario, as well as to be consistent with the common practice in our region. As reported in Table 4.9, the proposed project would generate 15,151 external daily trips with 1,171 in the AM peak hour and 1,433 in the PM peak hour.

14.2 Effects of the North County Specific Rates

To better understand how the surveyed North County specific residential trip generation rates would affect the study area traffic operations, analyses were conducted for the various facility types (roadway, intersection, two-lane highway, and freeway) using identical methodology as described in Chapter 2.

Table 14.2 summarizes and compares the potential project direct and cumulative impacts, as well as General Plan inconsistencies (Horizon Year) for project traffic generated based on both the North County specific residential trip generation rates and the SANDAG rates.

As shown in the table, project traffic generated with the North County specific residential rates would not result in project impacts at the following locations when compared to project traffic generated with the SANDAG rates:

Existing Plus Project (Phase C)

- E. Vista Way, between Gopher Canyon Road and Osborne Street

Existing Plus Project (Phase E, Buildout)

- E. Vista Way, between SR-76 and Gopher Canyon Road

Horizon Year Base Plus Project with Road 3

- I-15, between Centre City Parkway and El Norte Parkway
- I-15, between El Norte Parkway and SR-78

Horizon Year Base Plus Project without Road 3

- Valley Center Road, between Miller Rd and Indian Creek Rd
- I-15, between Centre City Parkway and El Norte Parkway
- I-15, between El Norte Parkway and SR-78

TABLE 14.2
SIGNIFICANT IMPACT COMPARISONS
NORTH COUNTY SPECIFIC RATES VS. SANDAG RATES

Impacted Facility	E+P (Ph A)		E+P (Ph B)		E+P (Ph C)		E+P (Ph D)		E+P (Ph E, Buildout)		E+C+P		H+P (w/ Rd 3)		H+P (w/o Rd 3)	
	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN
<i>Roadway</i>																
Camino Del Rey, Old River Rd to W. Lilac Rd													●	●		
W. Lilac Rd, Old Highway 395 to Main St					●	●							●	●		
W. Lilac Rd, Main St to St "F"													●	●		
W. Lilac Rd, St "F" to Covey Ln													●	●		
Old Highway 395, E. Dulin Rd to W. Lilac Rd													●	●	●	●
Old Highway 395, E. Dulin Rd to W. Lilac Rd													●	●	●	●
Gopher Canyon Rd, E. Vista Wy to I-15 SB Ramps					●	●	●	●	●	●	●	●				
E. Vista Wy, SR-76 to Gopher Canyon Rd										●	●	●				
E. Vista Wy, Gopher Canyon Rd to Osborne St						●	●	●	●	●	●	●				
Pankey Rd, Pala Mesa Dr to SR-76											●	●				
Lilac Rd, Old Castle Rd to Anthony Rd											●	●				
Lilac Rd, New Road 19 (east of Betsworth Rd) to Valley Center Rd															●	●
Valley Center Rd, Miller Rd to Indian Creek Rd																●
<i>Intersection</i>																
E. Vista Way / Gopher Canyon Road											●	●	N/A	N/A	N/A	N/A

TABLE 14.2
SIGNIFICANT IMPACT COMPARISONS
NORTH COUNTY SPECIFIC RATES VS. SANDAG RATES

Impacted Facility	E+P (Ph A)		E+P (Ph B)		E+P (Ph C)		E+P (Ph D)		E+P (Ph E, Buildout)		E+C+P		H+P (w/ Rd 3)		H+P (w/o Rd 3)	
	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN
SR-76 / Old River Road/E. Vista Way											●	●	N/A	N/A	N/A	N/A
SR-76 / Olive Hill Road/Camino Del Rey											●	●	N/A	N/A	N/A	N/A
Old Highway 395 / SR-76											●	●	N/A	N/A	N/A	N/A
Pankey Road / SR-76											●	●	N/A	N/A	N/A	N/A
Old Highway 395 / E. Dulin Road											●	●	N/A	N/A	N/A	N/A
Old Highway 395 / W. Lilac Road					●	●					●	●	N/A	N/A	N/A	N/A
I-15 SB Ramps / Old Highway 395											●	●	N/A	N/A	N/A	N/A
I-15 NB Ramps / Old Highway 395											●	●	N/A	N/A	N/A	N/A
Old Highway 395 / Circle R Drive							●	●			●	●	N/A	N/A	N/A	N/A
I-15 SB Ramps / Gopher Canyon Road			●	●							●	●	N/A	N/A	N/A	N/A
I-15 NB Ramps / Gopher Canyon Road			●	●							●	●	N/A	N/A	N/A	N/A
Miller Road / Valley Center Road											●	●	N/A	N/A	N/A	N/A
<i>Freeway</i>																
I-15, Riverside Co. Boundary to Old Highway 395											●	●	●	●	●	●
I-15, Old Highway 395 to SR-76											●	●	●	●	●	●
I-15, SR-76 to Old Highway 395											●	●	●	●	●	●
I-15, Old Highway 395 to Gopher Canyon Rd											●	●	●	●	●	●

TABLE 14.2
SIGNIFICANT IMPACT COMPARISONS
NORTH COUNTY SPECIFIC RATES VS. SANDAG RATES

Impacted Facility	E+P (Ph A)		E+P (Ph B)		E+P (Ph C)		E+P (Ph D)		E+P (Ph E, Buildout)		E+C+P		H+P (w/ Rd 3)		H+P (w/o Rd 3)	
	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN	NC	SAN
I-15, Gopher Canyon Rd to Deer Springs Rd											●	●	●	●	●	●
I-15, Deer Springs Rd to Centre City Pkwy											●	●	●	●	●	●
I-15, Centre City Pkwy to El Norte Pkwy											●	●		●		●
I-15, El Norte Pkwy to SR-78											●	●		●		●

Source: Chen Ryan Associates; May2013

Notes:

E = Existing

P = Project

Ph = Phase

C = Cumulative Projects

H = Horizon Year

NC = North County Specific

SAN = SANDAG

N/A = Not Analyzed

● Impacted under North County Specific Rates.

● Impacted under SANDAG Rates.